

Treatment of Ceilings.

The ceiling is perhaps the part of an apartment that calls most loudly for decoration, and no architectural feature is more susceptible of it, where it might be introduced with more effect, or give more pleasure to the inmate; yet this feature we almost invariably neglect. We naturally look up for beauty; however lovely the earth, the sky, both night and day, presents us with greater charms; we are cheered in our outdoor hours by its ever-changing picture, for which a flat white plane is a miserable substitute in our indoor life. To houses of the very highest class these remarks will apply, for it is a feature which has not had its due proportion of attention, in point of decoration, in any class of buildings, from the cottage to the palace. There certainly can be no more fitting place for decoration in the habitation of a being created upright. Can inconsistency be more extreme than that presented by thousands of apartments, where a rich, elaborately decorated carpet is under the feet, and a plain, dead, flat ceiling above? In the interior of Arabian buildings the ornaments almost invariably become richer, more delicate and minute, as their height from the floor increases, and the most exquisite productions of the artist are lavished on the ceiling. With respect to the form, the curve is at all times preferable to the flat, though the latter by various means is capable of great beauty also. No very great additional height is required in order to have a curved ceiling, as, whether coved or segmental, the rise need not be very great. For rooms of great pretension there is no form more noble and natural than the vault and dome, particularly the latter, whether hemispherical or segmental, as far as it suits the plan or can be adopted by pendentives or otherwise. It is the best substitute for the blue vault of the sky, the starry concave of the heavens. It was a fine idea of the builders of the mosque of St. Sophia at Constantinople—a conception in advance of ours—to make the curve of its dome so flat that it should seem to correspond with that of the sky, and be a portion of the firmament. We want an enlarged, improved, enriched, and at the same time inexpensive system of interior decoration, for domestic and ecclesiastical, commercial and other buildings, in our Anglo-Classic styles. For churches, collegiate and other buildings in the Pointed style, we have examples in our cathedrals and other buildings, which prove that the genius of interior decoration was once among us, as well as the taste to employ it. At Henry the Seventh and King's College Chapels; the oratory at Beauchamp Chapel; the Temple Church; Wolsey's Hall, Hampton Court; Christ Church Hall, Oxford; Westminster Hall, and others, we have ceilings and roofs that might vie with any that Europe could show. For assistance in evolving a system of Classic decorations we might look to some parts of the Continent. Exterior decorations there has sometimes probably been carried too far, a few Continental edifices exhibiting ornaments so minute and fragile as to seem at least unfit for exposure to the weather in any climate. But this could not be said of interiors. The Moorish or Morisco-Spanish architecture suggests to us what richness might be produced by very simple means; their icicle pendants, inlays, and casings, and purely geometrical and imaginative ornaments, are very effective, and with them they often produce greater results than we, with all nature to imitate, have attained to. But the art of interior decoration was better understood and more successfully practiced in the great age of modern art in Italy, and indeed throughout the Middle Ages than at present in any country. We never had any decoration, to be compared with the mural and fresco paintings of the Italians, and there is probability in the supposition that their system was obtained from remains of the ancients, which time or violence has not spared to us. Beside the curved and richly emblazoned ceilings produced by the Italians, and the pictorial embellishment of their walls, ours might symbolize poverty itself. The ceilings of the principal apartments of a Roman, Genoese, Venetian or Florentine palace were considered as most important features, and on their design and execution the highest talent was employed. In ecclesiastical buildings the contrast with ours would be still greater. Whilst the interior of the churches of Italy glow with every rich hue of the marble quarry, and are virtually galleries of art, what is the aspect of ours?—*London Architect.*

Subscription price of this Journal is \$2.00 per year. Examine the Contents of this Issue and see if it is not worthy of your support.

Architectural and Mechanical Works.

In our list below will be found the names of books on architectural and mechanical subjects, the prices of which have been greatly reduced if taken in connection with the CALIFORNIA ARCHITECT. Old subscribers will be given the books at a large discount, so that they may feel that no favoritism is shown. It will be noticed that some of the books are given free to new subscribers.

	Price of Book.	With Cal. Architect.
Mechanics' Geometry.....	\$5 00	\$5 75
Monckton's National Carpenter.....	5 00	5 75
Cottages.....	1 00	2 40
Shavings and Saw Dust.....	1 50	2 75
Moore's General Assistant.....	2 50	3 25
Plaster and Plastering.....	1 00	2 40
Hand-Book of Legendary Art.....	3 00	3 75
Manual for Furniture Men.....	1 00	2 40
Water Closets.....	1 50	2 40
Cutting Tools.....	1 50	3 00
Sewer Gas and Its Dangers.....	1 25	2 50
Handrailing and Staircasing.....	1 25	2 75
Sloan's American Houses.....	1 50	2 75
Amateur Mechanic's Workshop.....	1 50	3 00
American Cottage Builder.....	3 50	4 00
Wheeler's Rural Homes.....	1 50	3 00
Burns' Ornamental Drawing.....	1 00	2 40
Manual of Drawing for Carpenters.....	3 00	4 00
Steam Engine Catechism.....	1 00	2 40
Grimshaw on Saws.....	4 00	4 75
Modern Low-Cost Houses.....	50	2 00
A Cosy Home.....	25	2 00
California Picturesque Architecture, No. 1.....	3 00	4 00
California Picturesque Architecture, No. 2.....	3 50	4 25
The Artisan.....	5 00	5 75

The following are justly recognized as standard publications. Some of them are perfectly new works, but we make the same general reduction:

	Price of Book.	With Cal. Architect.
Tredgold's Carpentry.....	\$ 7 50	\$ 8 25
Building Construction, 3 vols.....	14 00	14 75
Picture-Making with Pen and Ink.....	4 00	5 25
New American Architecture (Palliser's).....	4 00	5 25
Palliser's New Quarterly, per year.....	3 00	4 00

We can furnish any book printed at publishers' prices, and will send all books free by either mail or express.

PLASTERING by a new process of hardening so as to make it available for the construction of floors in place of wood, has been brought before the French Academy of Science by M. Jute, says an exchange. A mixture of six quarts of plaster of good quality and one part of finely sifted, recently slaked white lime is employed like ordinary plaster. After it has become thoroughly dry, the object manufactured from it is saturated with a solution any sulphate whatever whose base is precipitated in an insoluble form by lime. The sulphate especially recommended for the purpose are those of iron and zinc. In order to obtain the maximum of hardness and tenacity it is necessary to temper the limed plaster well in as brief a space of time as possible, and with no more water than is strictly necessary.

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H. MAACK, Principal.

Fellin and Webster, the two-story frames. Owner, L. Bros; architects, John & Balczynski; contractor, W. Pluta; cost, \$10,250; signed, July 23; filed, July 24; \$2,000 framed; \$2,000 partitions set; \$1,700 outside on; \$2,000 on; \$2,550. 35 days.

Geary street, Nos. 21, 23, 25, alterations etc. Owner, Andrew M. Davis; architect, Copeland & Piece; contractors, Richardson & Gale; cost, \$1,640; signed, August 2; filed, August 10, 1890. Limit, 40 days; 75 per cent. as work progresses, balance 35 days.

story brick buildings. Owners, L. & M. Sachs; architect, Schmidt & Shea; contractor, R. Ringrose; cost, \$7,000; sureties, W. Plums and D. Corkery; limit, sixty-five days; signed, July 10; filed, July 12; \$1,750, rafters up; \$1,750, brown coated; \$1,750, completed; \$1,750, thirty-five days.

owner, Harry M. E.
contractor, John M. E.
ust 1; filed, August 1
brown coated; \$700 wh

Robertson; cost, \$2,900; signed, Aug-
limit 80 days; \$750 framed, \$750
to coated; \$700 completed.

San Pedro. Owner, William seven rooms on th
tor, R. Summers, cost, \$4,000. near Market, to cos

the south side of Milton street
at about \$2,200.

(Special to this Journal.)

Brick warehouse on San Pedro. Owner, William Buckley; contractor, R. Summers, cost, \$4,000.

seven rooms on the south side of Milton street near Market, to cost about \$2,200.

P. F. Nelson is putting up a five room and basement cottage on the east side of Myrtle near Twenty-sixth, for A. Rankin to cost about \$1,500.

F. K. Shattuck has decided to tear down his old brick building on the south-west corner of Eighth street and Broadway early next spring, and he will erect a handsome modern building, at least three stories high, that will throw the Delger building in the shade. Mr. Shattuck is improving all his property, and is making many improvements in Oakland.

Buck & Judkins have contracted with Nettie Fife to erect a building on the corner of Eleventh avenue and East Sixteenth street, to cost \$2,350.

Dr. W. C. Harrington has begun the erection of a handsome modern two-story residence on the northeast corner of Twenty-first street and Tenth Avenue. Robert Smilie is the contractor and the cost will be about \$5,000.

It is reported that the Judson Iron Works will be extended. A twenty-four inch bar mill will be erected. This establishment will have the largest capacity of any on the coast.

It is stated on good authority that M. B. Curtis is soon to build a large business block on the corner of San Pablo and University avenues.

E. L. Clifton, who purchased two of the Wood's lots from Scottcher & Gottshall, is erecting thereon a \$2,500 cottage.

F. C. Brounger has contracted to erect a building on the southeast side of Fifteenth street, between Seventh and Eighth avenues, for Mrs. Mary B. Watson, the price named being \$1,550.

The contract for the erection of the new school building has been awarded to Thomas Downing of Mission San Jose, who has just completed the Warm Springs building. Contract price, \$4,300 for main building; out-buildings, \$95. Work will be commenced at once, and the contract calls for the completion of the house by October 10.

SAN JOSE.

J. D. Stewart has contracted to improve the residence of Frank Lacoste, on North Third street, for the sum of \$3,075. Theodore Lensen is the architect.

Proctor Wells' contract for building the Conservatory of Music, Chapel, Library and Art Gallery, at the University of the Pacific, was filed in the Recorder's office Wednesday. The price is \$28,490 and the building is to be completed by December 31, 1889, under a penalty of \$5 a day.

A contract between James Farney and Proctor Wells was filed in the Recorder's office Wednesday, wherein the latter agrees to build for the former on the northwest corner of Ninth and San Salvador streets on or before October 1, 1889, a frame dwelling to cost, \$2,752.

ALAMEDA.

Chas. Cuneo is having built a five room cottage on Benton street.

Mr. Hamilton will erect a large dwelling on Pacific avenue.

SANTA ROSA.

Col. McDonald is having erected a cottage on McDonald avenue.

Simpson & Roberts are erecting a factory building.

UKIAH.

Livernash & Dowling are having erected four brick stores. T. J. Ludwig is doing the work.

CAMP TAYLOR.

Jos. F. Bertrand is building a large hotel near this place. Wm. Schrof of San Francisco is the architect. It is being built by days work under the superintendency of Mr. Anderson and will cost nearly \$8,000.

MODESTO.

Contract let to J. P. Allen for the erection of the M. E. Church. Amount \$7,000; B. F. Price of Philadelphia is the architect.

Carpenters not Wanted.

Since the great Seattle fire, this office has received numerous letters from carpenters inquiring as to the chance for work up north. The following from the "Post Intelligencer" will give ample information.

Carpenter work in Seattle, since the fire, has not been sufficient to supply the demand made by that class of mechanics. Great numbers of them have come here in anticipation of immediately rebuilding another wooden city, and are now disappointed. Work in that line began to cease within one week after the conflagration because the wood structures for tents and tent-rafts were all finished within that time. Just as this work was completed, and before any new and substantial wooden structures had been commenced, steamers came in from San Francisco, laden with hundreds of carpenters. They also flocked hitherward from the east, as far as Maine and Massachusetts, only to discover that work here in their line was at a temporary stand still, lasting for weeks, and which even now is not sufficiently active to give employment to all these throngs that still continue to come. The condition as above stated being apparent, several builders, contractors and carpenters were called upon, for more specific information on the subject.

Mr. Henry Jones, contractor, said: "I never was in a town where more carpenters applied for work within a given time. Since the fire I have had from forty to fifty new applicants each day present themselves for employment. About fifty came up from San Francisco on the last steamer, but others also came from Minneapolis, Chicago and Milwaukee. I have had as many as fifteen apply to me within half an hour."

"It will require from thirty to ninety days for builders to complete plans, get stone basements in and blocks under way so as to require carpenters and several other classes of skilled mechanics. The rush of carpenters is premature. Mechanics should have more sense than to over-run a city on the very heels of a fire."

A. Paulsen, another contractor said:

"About fifty new carpenters every day call on me for work. Some of them appear to be willing to work for any wages; but I have no work for them, and if I had, I want men who stick up for their wages. I think that not more than one half of these floating men are carpenters, although they claim to be such. Besides, it is strange that the city should be so over-run with new carpenters when the proposition is to build the new business portion with brick and iron. More than 1,000 carpenters have come here since the fire."

"It is not carpenters that we require for handling the rough lumber in building new wharves and docks. It is an old saying that a hatchet and saw and one day's work on scantling makes some carpenters."

Owen Thomas, a builder, being called upon, said: "There are too many in the city who pretend to be carpenters, but not enough mechanics. A man carrying tools, and a carpenter, are often hoaxes of different colors. I suppose this fire will make 5,000 new carpenters. It is said that the building of the Coronado, at San Diego, made more men carpenters than the building of the Palace at San Francisco, which made many thousand. Perhaps the day is past for men to learn their trades as they used to do. Applications made on me last week for carpenter work, would average fifty a day. I hired many during the week and discharged about as many as I hired."

The way I have, from experience, found it to be, carpenters on the Pacific coast have more activity and energy in them than those from the east; but at most we have to hire them as they are and discharge them as we find them to be."

Mr. F. M. Wooderman who is constructing buildings at Gilman's wharf, says he has a daily average of forty carpenters, applying for work.

Mr. George Costen, was then called upon. He said: "The membership of the Seattle Carpenters' Union is steadily increasing, it being numerically stronger than any other labor organization in the city. We are willing and able to supply contractors with good carpenters, according to the nine-hour agreement entered into last spring by and between the union and contractors. Our organization is to assist good carpenters in getting employment and to prevent the incompetent from competing in our work. I think that local contractors should make a distinction in giving work to resident mechanics rather than those who come here among the floating population; and this will be the result if the building inspector requires good workmen, as well as good work in the buildings."

About one-third of our capable carpenters are thrown out of work here by reason of the presence of poor ones, that continue to come. Shortly after the fire some unscrupulous contractor, recently from the east, published a notice in the Chicago Inter-Ocean, stating that 4,000 carpenters were wanted at Seattle. While they might help a contractor to get work done cheaply, it works an injury to the resident mechanics. Out of the 1,500 carpenters now in this city, not over 35 per cent. are employed. Of these, there are probably 500 who are poor workmen. Wages is \$3 60 per day. Notwithstanding the influx, the best policy is to employ good men at nine hours and good wages."

The * California * Architect * and * Building * News.

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+THE+

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SAN FRANCISCO, SEPTEMBER 15, 1889.

Mr. George H. Wolfe, having no further connection with this journal, correspondents will in future please address their communications to the *California Architect and Building News*, 408 California street, San Francisco, Cal.

IN the January number of this journal the announcement was made that a change in ownership had been made and that henceforth it would be managed by a company. This arrangement was satisfactory to some for the following reasons, as stated at the time.

"The publication of a journal devoted to the interests of architects and builders on the Pacific Coast is an important measure and is too self-evident to require the support of argument."

So far, in the history of California, the necessity for such a journal has been met only in the publication of the *CALIFORNIA ARCHITECT AND BUILDING NEWS*.

That journal, however, has hitherto been an individual enterprise, edited and managed by one still practicing the profession of architect, and therefore has not received that undivided and united support that would flow to a journal entirely free from all personal and professional entanglements."

Since January the journal has been under the management of an individual and has not dropped its personal character as was expected, neither has it assumed the tone which was hoped by many that it would take. It has been more of an advertising sheet than a medium of thought or intelligence.

With this number the architects themselves take control and will strive to make it a worthy organ of a great profession, to which all of the members, whether in this city, in Oregon, or elsewhere on the Pacific Coast, are invited to contribute any item on any subject relating to architecture or building.

Of this number we shall not say more than to ask your indulgence for any imperfections that may appear.

The regular monthly meeting of the San Francisco Chapter A. I. A. was held on Friday evening, September 6th. In the neighborhood of a dozen members were present. Messrs. Franklin Williams and D. L. Williams of Portland were elected fellow members. The amendment to the by-laws, changing the evening for the regular meeting from the first to the second Friday in the month, was carried. The election of officers was postponed for two weeks, to which time the meeting adjourned in the hopes of having a more numerous attendance.

THE trustees of the Lick fund advertised about two years ago for competitive designs for the statutory provided for in Mr. Lick's bequests, to be erected in this city, to commemorate the early epochs in the history of the State. The proposed monument was to be well worth \$100,000, and the premiums offered by the trustees were the execution of the work to the first competitor, \$500 to the second, and \$300 to the third.

Some twenty-five designs were submitted, but after many months delay the trustees have finally decided that none of the projects were appropriate for the purpose, and have now instituted a second competition, selecting the names of four firms and individuals, who are to submit designs and models of the same, for which the trustees agree to pay each competitor the sum of \$750.

We are glad to see that the Lick trustees have learned through the failure of their first competition, that to secure a design on which sufficient time and study have been bestowed to obtain a satisfactory result, it is necessary to assure the designer adequate compensation for that time and study.

It is very evident that a premium not commensurate with the importance of the project will tend to attract designs, whose artistic merit correspond rather to the amount of the premiums offered than to the importance of the proposed work, for no artist or architect of standing is desirous of risking his time, which is money, on such an uncertain proposition as the ordinary competition.

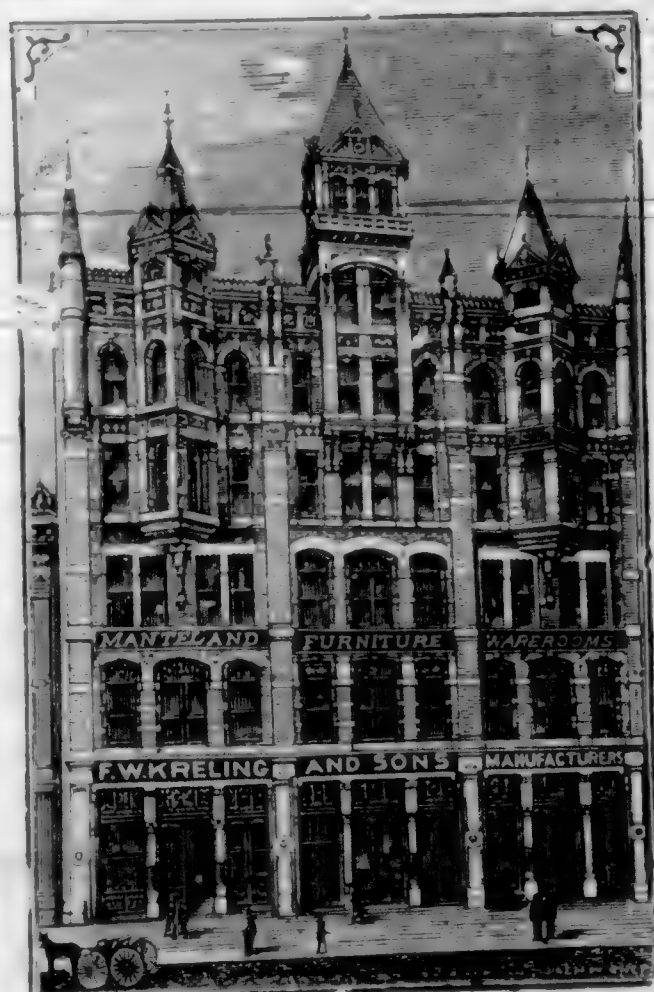
It goes without argument, however, that where designs are called for, and the results do not come up to expectations, it is not right to refuse to pay the proffered prizes to those whose trust in the faith of the management was sufficient to lead them to enter the race.

In this connection we deem it appropriate, and of interest to our readers, to publish the following schedule of terms adopted by the American Institute of Architects nearly twenty years ago, and we desire to urge the justice and equity of the principles involved upon the consideration of public and private societies, and individuals who may in the future invite our brethren to enter into honorable competition.

Schedule of terms regulating open and close competitions for architectural works, adopted by the American Institute of Architects in convention assembled, November 8th and 9th, 1870, and recommended to all architects building committees and proprietors throughout the country.

1. The instructions must not require more drawings or estimates than are necessary in order clearly to explain the design, and should require that all the designs submitted be drawn to a uniform scale, which must be clearly defined, and that all perspectives required to be drawn to the same scale as the geometrical drawings, and on a plane at the corner of the building nearest the point of sight; a deviation from which will cause their rejection.

2. In case the amount to be expended is limited, the instructions must state that an excess of ten per cent on the expense of executing any design, over and above the sum mentioned, will exclude it from competition, the amount of expense to be determined by the professional experts in the jury; and in case the amount to be expended is not fixed, then the competitor may use his own discretion as to the costliness of the design which he makes.



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3. A design will be excluded from the competition, if sent in after the stated period, and if it contains deviations from the instructions. If, from any of the above reasons, all submitted designs are rejected, then the jury is bound to publish the reasons which led to its verdict.

4. The period given for preparing the design must be long enough, not only for perfecting it and preparing the necessary drawings, but must make some allowance for the ordinary occupations of competitors. An explicit statement must be given as to the time when the decision on the merits of the designs is to be rendered, and that all designs shall be returned to their authors. An architect's drawings are his own private property, unless paid for, in which case they are for the sole use and benefit of his client; but the actual drawings still belong to the architect who made them.

5. The designs should be submitted to a jury of experts, whose decision is to be final. One half of the jury should be architects, and in the case of an open competition for a public building, it should be selected by the building committee or owner. The jury must be named in the instructions which the committee shall have sanctioned before publication. No person can be competent to serve as juror who submits a design, or is in any way interested in any design submitted, or who has not renounced all intention of participating in the execution of the work.

6. All designs submitted, in open competition for public buildings, should be publicly exhibited two weeks before the decision is made.

7. In the case of open competitions the first premium must not be less than the amount which the architect would have received had there been no competition, and at least an equal amount should be divided among the other competitors, according to the merits of the designs submitted.

8. It is recommended that, in close competitions, wherein the number of competitors is limited, a sum equal to the full value of one design be divided equally among the authors of all except the premiated design, which shall be compensated for as provided in the last preceding rule.

9. The instructions must state that in case the building is erected after any of the designs submitted in competition, it must be given in charge of the author of the first premiated design, who is to be employed at the usual compensation; and if any other designs, or parts of designs, are used, it can be done only with the consent of their authors; and they must be compensated for the full value of the designs or parts of designs used, irrespective of the premiums that may have been awarded.

10. The premiums must be awarded, under all circumstances, for the designs which may have been admitted in competition.

11. It is recommended that, in the schemes of competition, it shall be provided that the names of the competitors shall not be known to the jury.

Academy of Sciences.

The engraving of the new building for the California Academy of Sciences which appears in this issue of the ARCHITECT was to have been printed with the August number, but by the carelessness of a workman the cut was destroyed, and the view which is now inserted has been made the second time. This view represents the front of the new California Academy of Sciences Building now in course of construction on Market street, between Fourth and Fifth. It has been prepared with great care from drawings made by Messrs. Percy and Hamilton, constructing architects.

The structure to which this front belongs, will be one of the finest and most substantial in the city. It nearly covers the whole of a trapezoid, the two parallel sides of which measure respectively 275 and 195 feet; the side at right angles which fronts on Market street, being 80 feet. It will cost over \$300,000 and it will be built of the best stone, brick, iron and other materials to be found in the market.

The building is divided into two different structures; one facing on Market street, covering an area of about 80x86 feet, being a commercial block; the other is devoted to the rooms of the Academy. The former is seven stories high, the Academy six. Between the two structures there is a court 80x27 feet.

The California Academy of Sciences was organized on April 4, 1853. None of the charter members are now alive. It had a very precarious existence for a great many years; and had not the late philanthropist James Lick so munificently endowed it, first with the lot on Market street, valued at over \$300,000 and

afterwards with one half of the residue of his valuable estate, which will nearly reach half a million dollars, it is doubtful if the Academy of Sciences could have for many years moved from the dilapidated building where it is now located, where a gradual deterioration is going on in everything combined in a building so thoroughly saturated with water as that building is, where dampness constantly sweats from its walls, where moisture constantly burdens the atmosphere and where moss and mould and mildew lurk in every crack and cranny of the building attacking and damaging every perishable thing therein contained. The occupation of the building by those whose business constantly calls them there is only rendered tolerable by constant fires in the stove all the year around.

Fortunately due to the generosity of Mr. Lick and the energy of the present Board of Trustees, in the course of the next year the quarters of the Academy will be in one of the best buildings erected for that purpose in America.

The former Board of Trustees were averse to incurring a large debt in order to improve the valuable lot owned by the Academy on Market street, but the present Board thinks it is poor policy to allow the collections to go to ruin for lack of proper rooms and deprive the members of the Academy of suitable lecture rooms, library, museum and other departments of such an institution; besides losing the handsome revenue derived from the rental of the commercial block so advantageously situated as the one owned by the society.

At the beginning of last year the President of the Board of Trustees and the prudential committee reported to the Academy the intention of the Board of Trustees to improve as soon as possible the property on Market street. The Council of the Academy and the Academy in one of its meetings passed resolutions indorsing the resolution of the Board of Trustees. Satisfactory arrangements having been made by which the Lick State Trustees would advance to the Academy of Sciences all the necessary funds to erect the contemplated building, steps were taken at once to carry out the project.

In May of last year a circular was sent to many architects inviting them to present plans for an Academy of Sciences building to conform with certain specified requirements. The firms of J. M. Curtis, W. F. Smith, Percy & Hamilton, Salfield & Kohlberg and J. J. & T. D. Newsom responded to the invitation and offered plans which were opened on June 18, 1888.

It was found that all the plans, though meritorious and conscientiously executed did not answer the requirements of the Academy and it was resolved by the Board of Trustees to accept them all but adopt none.

The order in which the plans were accepted was: First, those of J. M. Curtis; second, W. F. Smith's; third, Percy & Hamilton's; fourth, Salfield & Kohlberg's; and fifth, J. J. & T. D. Newsom's.

A committee composed of Messrs. Davis and Molera of the Board of Trustees and Dr. Harkness, president of the Academy was appointed to take from the plans submitted those features best adapted to the needs of the Academy and supplement them with those they themselves might suggest. Also to recommend who among the competing architects should be appointed supervising architect.

After many consultations the Committee prepared the general plans. Mr. Davis made the plans for the Commercial building, Dr. Harkness the distribution of rooms for the Academy, and Mr. Molera the fronts of the building and the general plans. These plans were agreed to and submitted by all the members of the Committee. They differed, however, in the appointment of the supervising architect. Mr. Davis recommending Mr. Curtis while Messrs. Harkness and Molera recommended the firm of Percy and Hamilton.

The Board of Trustees adopted the recommendation of the majority and Messrs. Percy & Hamilton were appointed the architects "to prepare the necessary drawings and specifications to erect the Academy's building and take the general plans prepared by the committee on plans, composed by Messrs. Molera Davis and Harkness as the basis of their operations."

The general plans have been changed in many particulars, specially the front of the building. The late Mr. Lick in his deed of the Market street property, and subsequently on the deed of trust, expressed his desire that the Academy's building should be of a classical design. In deference to that wish and according to their own ideas the committee designed the front of the Academy with classical elements. The architects have changed it for a front on the so-called Romanesque style, the reasons for the changes are that it is difficult to design buildings of more than two

or three stories high with classical lines. For an Academy of Sciences, it would have been better to adopt a classical front than one in a style the best recommendation of which being its novelty. That buildings with classical orders and several stories high can be built with handsome fronts is numerously exemplified both in Europe and in this country, and conspicuously so in the recently completed Drexel building in New York ten stories high, which is one of the grandest and and handsomest buildings in America. However, the Academy of Sciences front is a fine one and in combination with the splendid materials used in its construction, will do credit both to the Association and the architects.

E. N. SHAW, in an article published in the *Architect* (a London periodical) says the contents of a building have undoubtedly much to do with its safety or danger, but in estimating the whole risk, the materials of which the building is constructed must never be put out of consideration. Every building cannot be erected with brick column and groined arches, but there is a vast range between these and the miserable cast iron pots too commonly to be seen, many of which have been put in without having been tested for strength even at the ordinary temperature of the atmosphere, much less at that of a fire. The following illustration may be given of a fact well known to all firemen of experience, but seldom proved by demonstration for those not specially interested.

A fire occurred in a warehouse of enormous proportions and raged with great fury for five hours, at the end of which time it was extinguished, and a very large proportion of the building and its contents saved. The warehouse was constructed of brick walls; it had wooden floors supported on wooden beams, which in their turn were carried on wooden story posts about 12 inches thick, and although serious damage was done, not one portion of the heavy wood-work was destroyed. After the fire, the proprietors allowed the chief of the fire brigade to remove one of the story posts, with a section of the beams and other parts surrounding it above and below.

This post had been subjected to the full action of the fire during the whole of its duration, as already mentioned, or making full allowance for everything, including the delay of the fire attacking the particular spot on which it stood, and the time at which the cooling process commenced, certainly not less than four and a half hours. As large quantities of water had been used, and it was probable that everything had been saturated, the wood was carefully dried before a strong fire until not a trace of moisture remained in it. It was then set on end in an open yard, exactly as it had stood in the warehouse, with the pedestal underneath, the cap above, and the beam across the cap, more than a ton of shavings, light wood and heavy wood were placed around it, and after the whole heap was saturated with petroleum, a light was applied to it, and after this, large quantities of petroleum and turpentine were pumped on it. At the end of two and a half hours the post, beam and other parts were withdrawn from the fire, and within a few minutes from the time they were withdrawn they ceased to burn. A few feet were then sawn off horizontally, at that part which had suffered most from the flames, and afterward the same piece was split longitudinally with steel wedges, in order to examine its condition.

The post was of pitch pine, about the most inflammable wood known, and yet after exposure for seven hours to fire, the fury of which could not be exceeded except in blast furnaces, it contained within a quantity of perfectly uninjured and apparently fresh wood, probably capable of supporting the whole weight the original post was designed to carry. Immediately after the saw cut, and again after the cleating with steel wedges, the centre was carefully examined, and found to be just perceptibly warm to the touch, but nothing more, thus proving that the fibre, in which the strength lay, was quite uninjured.

A new work has been laid on our table entitled: A Manual of Machine Construction for Engineers, Draughtsmen and Mechanics, by John Richards, Esq. The summary of contents are: Machine Design, The Transmission of Power, Steam Machinery, Hydraulics, Process and Properties, Tables and Memoranda. It is well illustrated with clean cut drawings of machinery on a large scale, and contains tables and formulae seldom found in technical works, the use of which will greatly lighten the office labor of the engineer. It is bound in strong, flexible covers and so arranged that it can be used with one hand while working with the other. Publisher's price, \$5.00.

AT the recent meeting of the National Electric Light Association at Niagara Falls, considerable time was taken up by the reading of papers and the discussions of the requirements for buildings intended for this purpose. Mr. M. D. Law read a paper, giving his view of certain necessary details for a model building, which should be of brick or stone, substantial, and not more than two stories in height, and as near fire-proof as possible. The boiler room should be located on the ground floor with plenty of ventilation, and the fire room cool and comfortable. It being necessary to keep engines, shafting and dynamos as cool as possible good ventilation should be provided therefore. The dynamo room should be directly over the shafting lines, well lighted and the ventilation perfect. The roof should be constructed without intermediate posts or supports, and of sufficient height and strength to support an overhead track, so that dynamos or armatures can be hoisted and carried over the ones that may be running. A cupola should be provided with window ventilators extending the full length of the two sides, and so arranged as to be under the control of the machine man; the line wires being run from this cupola as required. A store room of good size should be provided and fitted up with closets, drawers and shelves. The workshop should be suitable for lathe and benches.

Mr. G. T. Henthorn gave a detailed description of a new station building at Providence, R. I.

Those wishing to continue the subject will find a full description in the issue of August 17th of the *Western Electrician* of Chicago.

THE Kearny street property owners and business men have petitioned the Board of Supervisors to have that street paved with bituminous rock. The Street Committee of the Board has approved the petition and ordered specifications for the work to be prepared. The laying of this pavement on one of our principal streets will be a long step in the right direction, for besides the advantage of noiselessness this pavement requires but a fraction of the traction power necessary on the uneven cobbles and basalt blocks with which our main business streets are now disfigured.

IN new apartments. The Technical Society and the Astronomical Society of the Pacific Coast have rented the large rooms adjoining the offices of this Journal. These spacious rooms are light, airy and convenient, and will be open at all times of the day to the membership of these societies. We congratulate them on their new departure and welcome them to all the benefits.

Magnitude in Architecture.

MAGNITUDE is the great object and result of design, and this quality is only to be attained by the fine adjustment of relative proportions in magnitude and order. Architecture (says Aristotle) consists in magnitude and order. The works of man, compared with those of Nature, display our insignificance. The Pyramids, seen in the clear sky of Egypt, or St. Peter's at Rome, are proverbially disappointing to the first gaze of the beholder; it is only after he has instituted comparisons and measurements that he becomes sensible of the greatness of these human efforts—and his memory will supply him with many instances in which objects of inferior dimensions have surpassed them in impression of magnitude upon his mind. It is plain, therefore, that art alone can produce the full effect of magnitude, and to this the architect should direct all his skill; the ancients will be found consummate masters in this as well as in every other department of our art. It is, indeed, a fine art which enables the accomplished artist to raise ideas of magnitude and grandeur of composition on a piece of paper no bigger than your hand; while a less able one will cover a vast canvas without executing any comparable notions. Worthy of all inquiry and solicitude is such an art, for is the whole art of design and proportion. Pliny cites a statue of Hercules, so small that it might be lifted by the hand, which, however, conveyed more grandeur, magnitude and strength to the mind of the observer than a Colossus would have done. How great must have been the science of the master! And if, with such small means, he could effect the mind with these impressions, how great the economy of cost and material to the employer!—C. R. Cockerel, in *The Architect*.

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IRREGULAR PAGINATION

The regular monthly meeting of the San Francisco Chapter A. I. A. was held on Friday evening, September 6th. In the neighborhood of a dozen members were present. Messrs. Franklin Williams and D. L. Williams of Portland were elected fellow members. The amendment to the by-laws, changing the evening for the regular meeting from the first to the second Friday in the month, was carried. The election of officers was held for two weeks, to which time the meeting adjourned in hopes of having a more numerous attendance.

The trustees of the Lick fund advertised about two years ago for competitive designs for the statuary provided for in Mr. Lick's bequests, to be erected in this city, to commemorate the early epochs in the history of the State. The monument was to be well worth \$100,000, and the premises by the trustees were the execution of the work to competitor, \$500 to the second, and \$300 to the third. Twenty-five designs were submitted, but after many delay the trustees have finally decided that none of the were appropriate for the purpose, and have now instituted competition, selecting the names of four firms and als, who are to submit designs and models of the same, h the trustees agree to pay each competitor the sum of

we glad to see that the Lick trustees have learned through re of their first competition, that to secure a design on efficient time and study have been bestowed to obtain a ory result, it is necessary to assure the designer adequate ation for that time and study. ery evident that a premium not commensurate with the ice of the project will tend to attract designs, whose ar- rit correspond rather to the amount of the premiums an to the importance of the proposed work, for no ar- chitect of standing is desirous of risking his time, which on such an uncertain proposition as the ordinary com-

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1. The instructions must not require more drawings or estimates than are necessary in order clearly to explain the design, and should require that all the designs submitted be drawn to a uniform scale, which must be clearly defined, and that all perspectives required to be drawn to the same scale as the geometrical drawings, and on a plane at the corner of the building nearest the point of sight; a deviation from which will cause their rejection.

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"I never was in a town where more carpenters applied for work within a given time. Since the fire I have had from forty to fifty new applicants each day present themselves for employment. About fifty came up from San Francisco on the last steamer, but others also came from Minneapolis, Chicago and Milwaukee. I have had as many as fifteen apply to me within half an hour."

"It will require from thirty to ninety days for builders to complete plans, get stone basements in and blocks under way so as to require carpenters and several other classes of skilled mechanics. The rush of carpenters is premature. Mechanics should have more sense than to over-run a city on the very heels of a fire."

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The way I have, from experience, found it to be, carpenters on the Pacific coast have more activity and energy in them than those from the east; but at most we have to hire them as they are and discharge them as we find them to be."

Mr. F. M. Wooderman who is constructing buildings at Gilman's wharf, says he has a daily average of forty carpenters, applying for work.

Mr. George Costen, was then called upon. He said: "The membership of the Seattle Carpenters' Union is steadily increasing, it being numerically stronger than any other labor organization in the city. We are willing and able to supply contractors with good carpenters, according to the nine-hour agreement entered into last spring by and between the union and contractors. Our organization is to assist good carpenters in getting employment and to prevent the incompetent from competing in our work. I think that local contractors should make a distinction in giving work to resident mechanics rather than those who come here among the floating population; and this will be the result if the building inspector requires good workmen, as well as good work in the buildings."

About one-third of our capable carpenters are thrown out of work here by reason of the presence of poor ones, that continue to come. Shortly after the fire some unscrupulous contractor, recently from the east, published a notice in the Chicago Inter-Ocean, stating that 4,000 carpenters were wanted at Seattle. While they might help a contractor to get work done cheaply, it works an injury to the resident mechanics. Out of the 1,500 carpenters now in this city, not over 35 per cent. are employed. Of these, there are probably 500 who are poor workmen. Wages is \$3.60 per day. Notwithstanding the influx, the best policy is to employ good men at nine hours and good wages."

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ADVERTISING RATES FURNISHED ON APPLICATION.

SAN FRANCISCO, SEPTEMBER 15, 1889.

Mr. George H. Wolfe, having no further connection with this journal, correspondents will in future please address their communications to the *California Architect and Building News*, 408 California street, San Francisco, Cal.

IN the January number of this journal the announcement was made that a change in ownership had been made and that henceforth it would be managed by a company. This arrangement was satisfactory to some for the following reasons, as stated at the time.

"The publication of a journal devoted to the interests of architects and builders on the Pacific Coast is an important measure and is too self-evident to require the support of argument.

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We are glad to see that the Lick trustees have learned through the failure of their first competition, that to secure a design on which sufficient time and study have been bestowed to obtain a satisfactory result, it is necessary to assure the designer adequate compensation for that time and study.

It is very evident that a premium not commensurate with the importance of the project will tend to attract designs, whose artistic merit correspond rather to the amount of the premiums offered than to the importance of the proposed work, for no artist or architect of standing is desirous of risking his time, which is money, on such an uncertain proposition as the ordinary competition.

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SAN FRANCISCO, CAL.

3. A design will be excluded from the competition, if sent in after the stated period, and if it contains deviations from the instructions. If, from any of the above reasons, all submitted designs are rejected, then the jury is bound to publish the reasons which led to its verdict.

4. The period given for preparing the design must be long enough, not only for perfecting it and preparing the necessary drawings, but must make some allowance for the ordinary occupations of competitors. An explicit statement must be given as to the time when the decision on the merits of the designs is to be rendered, and that all designs shall be returned to their authors. An architect's drawings are his own private property, unless paid for, in which case they are for the sole use and benefit of his client; but the actual drawings still belong to the architect who made them.

5. The designs should be submitted to a jury of experts, whose decision is to be final. One half of the jury should be architects, and in the case of an open competition for a public building, it should be selected by the building committee or owner. The jury must be named in the instructions which the committee shall have sanctioned before publication. No person can be competent to serve as juror who submits a design, or is in any way interested in any design submitted, or who has not renounced all intention of participating in the execution of the work.

6. All designs submitted, in open competition for public buildings, should be publicly exhibited two weeks before the decision is made.

7. In the case of open competitions the first premium must not be less than the amount which the architect would have received had there been no competition, and at least an equal amount should be divided among the other competitors, according to the merits of the designs submitted.

8. It is recommended that, in close competitions, wherein the number of competitors is limited, a sum equal to the full value of one design be divided equally among the authors of all except the premiated design, which shall be compensated for as provided in the last preceding rule.

9. The instructions must state that in case the building is erected after any of the designs submitted in competition, it must be given in charge of the author of the first premiated design, who is to be employed at the usual compensation; and if any other designs, or parts of designs, are used, it can be done only with the consent of their authors; and they must be compensated for the full value of the designs or parts of designs used, irrespective of the premiums that may have been awarded.

10. The premiums must be awarded, under all circumstances, for the designs which may have been admitted in competition.

11. It is recommended that, in the schemes of competition, it shall be provided that the names of the competitors shall not be known to the jury.

Academy of Sciences.

The engraving of the new building for the California Academy of Sciences which appears in this issue of the ARCHITECT was to have been printed with the August number, but by the carelessness of a work-man the cut was destroyed, and the view which is now inserted has been made the second time. This view represents the front of the new California Academy of Sciences Building now in course of construction on Market street, between Fourth and Fifth. It has been prepared with great care from drawings made by Messrs. Percy and Hamilton, constructing architects.

The structure to which this front belongs, will be one of the finest and most substantial in the city. It nearly covers the whole of a trapezoid, the two parallel sides of which measure respectively 275 and 195 feet; the side at right angles which fronts on Market street, being 80 feet. It will cost over \$300,000 and it will be built of the best stone, brick, iron and other materials to be found in the market.

The building is divided into two different structures; one facing on Market street, covering an area of about 80x86 feet, being a commercial block; the other is devoted to the rooms of the Academy. The former is seven stories high, the Academy six. Between the two structures there is a court 80x27 feet.

The California Academy of Sciences was organized on April 4, 1853. None of the charter members are now alive. It had a very precarious existence for a great many years; and had not the late philanthropist James Lick so munificently endowed it, first with the lot on Market street, valued at over \$300,000 and

afterwards with one half of the residue of his valuable estate, which will nearly reach half a million dollars, it is doubtful if the Academy of Sciences could have for many years moved from the dilapidated building where it is now located, where a gradual deterioration is going on in everything combined in a building so thoroughly saturated with water as that building is, where dampness constantly sweats from its walls, where moisture constantly burdens the atmosphere and where moss and mould and mildew lurk in every crack and cranny of the building attacking and damaging every perishable thing therein contained. The occupation of the building by those whose business constantly calls them there is only rendered tolerable by constant fires in the stove all the year around.

Fortunately due to the generosity of Mr. Lick and the energy of the present Board of Trustees, in the course of the next year the quarters of the Academy will be in one of the best buildings erected for that purpose in America.

The former Board of Trustees were averse to incurring a large debt in order to improve the valuable lot owned by the Academy on Market street, but the present Board thinks it is poor policy to allow the collections to go to ruin for lack of proper rooms and deprive the members of the Academy of suitable lecture rooms, library, museum and other departments of such an institution; besides losing the handsome revenue derived from the rental of the commercial block so advantageously situated as the one owned by the society.

At the beginning of last year the President of the Board of Trustees and the prudential committee reported to the Academy the intention of the Board of Trustees to improve as soon as possible the property on Market street. The Council of the Academy and the Academy in one of its meetings passed resolutions indorsing the resolution of the Board of Trustees. Satisfactory arrangements having been made by which the Lick State Trustees would advance to the Academy of Sciences all the necessary funds to erect the contemplated building, steps were taken at once to carry out the project.

In May of last year a circular was sent to many architects inviting them to present plans for an Academy of Sciences building to conform with certain specified requirements. The firms of J. M. Curtis, W. F. Smith, Percy & Hamilton, Salfeld & Kohlberg and J. J. & T. D. Newsom responded to the invitation and offered plans which were opened on June 18, 1888.

It was found that all the plans, though meritorious and conscientiously executed did not answer the requirements of the Academy and it was resolved by the Board of Trustees to accept them all but adopt none.

The order in which the plans were accepted was: First, those of J. M. Curtis; second, W. F. Smith's; third, Percy & Hamilton's; fourth, Salfeld & Kohlberg's; and fifth, J. J. & T. D. Newsom's.

A committee composed of Messrs. Davis and Molera of the Board of Trustees and Dr. Harkness, president of the Academy was appointed to take from the plans submitted those features best adapted to the needs of the Academy and supplement them with those they themselves might suggest. Also to recommend who among the competing architects should be appointed supervising architect.

After many consultations the Committee prepared the general plans. Mr. Davis made the plans for the Commercial building, Dr. Harkness the distribution of rooms for the Academy, and Mr. Molera the fronts of the building and the general plans. These plans were agreed to and submitted by all the members of the Committee. They differed, however, in the appointment of the supervising architect. Mr. Davis recommending Mr. Curtis while Messrs. Harkness and Molera recommended the firm of Percy and Hamilton.

The Board of Trustees adopted the recommendation of the majority and Messrs. Percy & Hamilton were appointed the architects "to prepare the necessary drawings and specifications to erect the Academy's building and take the general plans prepared by the committee on plans, composed by Messrs. Molera Davis and Harkness as the basis of their operations."

The general plans have been changed in many particulars, specially the front of the building. The late Mr. Lick in his deed of the Market street property, and subsequently on the deed of trust, expressed his desire that the Academy's building should be of a classical design. In deference to that wish and according to their own ideas the committee designed the front of the Academy with classical elements. The architects have changed it for a front on the so-called Romanesque style, the reasons for the changes are that it is difficult to design buildings of more than two

or three stories high with classical lines. For an Academy of Sciences, it would have been better to adopt a classical front than one in a style the best recommendation of which being its novelty. That buildings with classical orders and several stories high can be built with handsome fronts is numerously exemplified both in Europe and in this country, and conspicuously so in the recently completed Drexel building in New York ten stories high, which is one of the grandest and and handsomest buildings in America. However, the Academy of Sciences front is a fine one and in combination with the splendid materials used in its construction, will do credit both to the Association and the architects.

E. N. SHAW, in an article published in the *Architect* (a London periodical) says the contents of a building have undoubtedly much to do with its safety or danger, but in estimating the whole risk, the materials of which the building is constructed must never be put out of consideration. Every building cannot be erected with brick column and groined arches, but there is a vast range between these and the miserable cast iron pots too commonly to be seen, many of which have been put in without having been tested for strength even at the ordinary temperature of the atmosphere, much less at that of a fire. The following illustration may be given of a fact well known to all firemen of experience, but seldom proved by demonstration for those not specially interested.

A fire occurred in a warehouse of enormous proportions and raged with great fury for five hours, at the end of which time it was extinguished, and a very large proportion of the building and its contents saved. The warehouse was constructed of brick walls; it had wooden floors supported on wooden beams, which in their turn were carried on wooden story posts about 12 inches thick, and, although serious damage was done, not one portion of the heavy wood-work was destroyed. After the fire, the proprietors allowed the chief of the fire brigade to remove one of the story posts, with a section of the beams and other parts surrounding it above and below.

This post had been subjected to the full action of the fire during the whole of its duration, as already mentioned, or, making full allowance for everything, including the delay of the fire attacking the particular spot on which it stood, and the time at which the cooling process commenced, certainly not less than four and a half hours. As large quantities of water had been used, and it was probable that everything had been saturated, the wood was carefully dried before a strong fire until not a trace of moisture remained in it. It was then set on end in an open yard, exactly as it had stood in the warehouse, with the pedestal underneath, the cap above, and the beam across the cap, more than a ton of shavings, light wood and heavy wood were placed around it, and after the whole heap was saturated with petroleum, a light was applied to it, and after this, large quantities of petroleum and turpentine were pumped on it. At the end of two and a half hours the post, beam and other parts were withdrawn from the fire, and within a few minutes from the time they were withdrawn they ceased to burn. A few feet were then sawn off horizontally, at that part which had suffered most from the flames, and afterward the same piece was split longitudinally with steel wedges, in order to examine its condition.

The post was of pitch pine, about the most inflammable wood known, and yet after exposure for seven hours to fire, the fury of which could not be exceeded except in blast furnaces, it contained within a quantity of perfectly uninjured and apparently fresh wood, probably capable of supporting the whole weight the original post was designed to carry. Immediately after the saw cut, and again after the cleating with steel wedges, the centre was carefully examined, and found to be just perceptibly warm to the touch, but nothing more, thus proving that the fibre, in which the strength lay, was quite uninjured.

A new work has been laid on our table entitled: A Manual of Machine Construction for Engineers, Draughtsmen and Mechanics, by John Richards, Esq. The summary of contents are: Machine Design, The Transmission of Power, Steam Machinery, Hydraulics, Process and Properties, Tables and Memoranda. It is well illustrated with clean cut drawings of machinery on a large scale, and contains tables and formulae seldom found in technical works, the use of which will greatly lighten the office labor of the engineer. It is bound in strong, flexible covers and so arranged that it can be used with one hand while working with the other. Publisher's price, \$5.00.

AT the recent meeting of the National Electric Light Association at Niagara Falls, considerable time was taken up by the reading of papers and the discussions of the requirements for buildings intended for this purpose. Mr. M. D. Law read a paper, giving his view of certain necessary details for a model building, which should be of brick or stone, substantial, and not more than two stories in height, and as near fire-proof as possible. The boiler room should be located on the ground floor with plenty of ventilation, and the fire room cool and comfortable. It being necessary to keep engines, shafting and dynamos as cool as possible good ventilation should be provided therefore. The dynamo room should be directly over the shafting lines, well lighted and the ventilation perfect. The roof should be constructed without intermediate posts or supports, and of sufficient height and strength to support an overhead track, so that dynamos or armatures can be hoisted and carried over the ones that may be running. A cupola should be provided with window ventilators extending the full length of the two sides, and so arranged as to be under the control of the machine man; the line wires being run from this cupola as required. A store room of good size should be provided and fitted up with closets, drawers and shelves. The workshop should be suitable for lathe and benches.

Mr. G. T. Henthorn gave a detailed description of a new station building at Providence, R. I.

Those wishing to continue the subject will find a full description in the issue of August 17th of the *Western Electrician* of Chicago.

THE Kearny street property owners and business men have petitioned the Board of Supervisors to have that street paved with bituminous rock. The Street Committee of the Board has approved the petition and ordered specifications for the work to be prepared. The laying of this pavement on one of our principal streets will be a long step in the right direction, for besides the advantage of noiselessness this pavement requires but a fraction of the traction power necessary on the uneven cobbles and basalt blocks with which our main business streets are now figured.

IN new apartments. The Technical Society and the Astronomical Society of the Pacific Coast have rented the large rooms adjoining the offices of this Journal. These spacious rooms are light, airy and convenient, and will be open at all times of the day to the membership of these societies. We congratulate them on their new departure and welcome them to all the benefits.

Magnitude in Architecture.

MAGNITUDE is the great object and result of design, and this quality is only to be attained by the fine adjustment of relative proportions in magnitude and order.

Architecture (says Aristotle) consists in magnitude and order. The works of man, compared with those of Nature, display our insignificance. The Pyramids, seen in the clear sky of Egypt, or St. Peter's at Rome, are proverbially disappointing to the first gaze of the beholder; it is only after he has instituted comparisons and measurements that he becomes sensible of the greatness of these human efforts—and his memory will supply him with many instances in which objects of inferior dimensions have surpassed them in impression of magnitude upon his mind. It is plain, therefore, that art alone can produce the full effect of magnitude, and to this the architect should direct all his skill; the ancients will be found consummate masters in this as well as in every other department of our art. It is, indeed, a fine art which enables the accomplished artist to raise ideas of magnitude and grandeur of composition on a piece of paper no bigger than your hand; while a less able one will cover a vast canvas without executing any comparable notions. Worthy of all inquiry and solicitude is such an art, for is the whole art of design and proportion. Pliny cites a statue of Hercules, so small that it might be lifted by the hand, which, however, conveyed more grandeur, magnitude and strength to the mind of the observer than a Colossus would have done. How great must have been the science of the master! And if, with such small means, he could effect the mind with these impressions, how great the economy of cost and material to the employer!—C. R. Cockerel, in *The Architect*.

Treatment of Ceilings.

THE ceiling is perhaps the part of an apartment that calls most loudly for decoration, and no architectural feature is more susceptible of it, where it might be introduced with more effect or give more pleasure to the inmate; yet this feature we almost invariably neglect. We naturally look up for beauty; however lovely the earth the sky both night and day presents us with greater charms; we are cheered in our outdoor hours by its ever changing picture, for which a flat white plane is a miserable substitute in our indoor life. To houses of the very highest class these remarks will apply, for it is a feature which has not had its due proportion of attention in point of decoration in any class of buildings, from the cottage to the palace. There certainly can be no more fitting place for decoration in the habitation of a being created upright. Can inconsistency be more extreme than that presented by thousands of apartments where a rich, elaborately decorated carpet is under the feet, and a plain, dead, flat ceiling above? In the interior of Arabian buildings the ornaments almost invariably become richer, more delicate and minute, as their height from the floor increases, and the most exquisite productions of the artist are lavished on the ceiling. With respect to the form the curve is at all times preferable to the flat, though the latter by various means is capable of great beauty also. No very great additional height is required in order to have a curved ceiling, as whether coved or segmental the rise need not be very great. For rooms of great pretension there is no form more noble and natural than the vault and dome, particularly the latter, whether hemispherical or segmental, as far as it suits the plan or can be adapted by pendentives or otherwise. It is the best substitute for the blue vault of the sky, the starry concave of the heavens. It was a fine idea of the builders of the mosque of St. Sophia at Constantinople—a conception in advance of ours—to make the curve of its dome so flat that it should seem to correspond with that of the sky, and be a portion of the firmament. We want an enlarged, improved, enriched, and at the same time inexpensive system of interior decoration, for domestic and ecclesiastical, commercial and other buildings, in our Anglo-Classic styles. For churches, collegiate and other buildings in the Pointed style, we have examples in our cathedrals and other buildings, which prove that the genius of interior decoration was once among us, as well as the taste to employ it. At Henry the Seventh and King's College Chapels; the oratory at Beauchamp Chapel; the Temple Church; Wolsey's Hall, Hampton Court; Christ Church Hall, Oxford; Westminster Hall, and others, we have ceilings and roofs that might vie with any that Europe could show. For assistance in evolving a system of Classic decoration we might look to some parts of the Continent. Exterior decoration there has sometimes probably been carried too far, a few Continental edifices exhibiting ornaments so minute and fragile as to seem at least unfit for exposure to the weather in any climate. But this could not be said of interiors. The Moorish or Morisco-Spanish architecture suggests to us what richness might be produced by very simple means; their icicle pendants, inlays and casings, and purely geometrical and imaginative ornaments, are very effective, and with them they often produced greater results than we, with all nature to imitate, have attained to. But the art of interior decoration was better understood and more successfully practiced in the great age of modern art in Italy, and indeed throughout the Middle Ages, than at present in any country. We never had any decoration to be compared with the mural and fresco paintings of the Italians, and there is probability in the supposition that their system was obtained from remains of the ancients, which time or violence has not spared to us. Beside the curved and richly embellished ceilings produced by the Italians, and the pictorial embellishment of their walls, ours might symbolize poverty itself. The ceilings of the principal apartments of a Roman, Genoese, Venetian or Florentine palace were considered as most important features, and on their designs and executions the highest talent was employed. In ecclesiastical buildings the contrast with ours would be still greater. Whilst the interior of the churches of Italy glow with every rich hue of the marble quarry, and are virtually galleries of art, what is the aspect of ours?—*London Architect.*

The September number of the "House Painting and Decorating," a monthly publication comes to us in a wonderfully improved appearance. We commend all our patrons to subscribe at \$1 00 a year. Address 1130, 35th street, Philadelphia.

Architectural and Mechanical Works.

In our list below will be found the names of books on architectural and mechanical subjects, the prices of which have been greatly reduced if taken in connection with the CALIFORNIA ARCHITECT. Old subscribers will be given the books at a large discount, so that they may feel that no favoritism is shown. It will be noticed that some of the books are given free to new subscribers.

	Price of Book.	With Cal. Architect.
Mechanics' Geometry.....	\$5 00	\$5 57
Monckton's National Carpenter.....	5 00	5 75
Cottages.....	1 00	5 40
Shavings and Saw Dust.....	1 50	2 75
Moore's General Assistant.....	2 50	2 25
Plaster and Plastering.....	1 00	3 40
Hand-Book of Legendary Art.....	3 00	2 75
Manual for Furniture Men.....	1 00	3 40
Water Closets.....	1 50	2 40
Cutting Tools.....	1 50	2 00
Sewer Gas and Its Dangers.....	1 25	3 50
Handrailing and Staircasing.....	1 25	2 75
Sloan's American Houses.....	1 50	2 75
Amateur Mechanic's Workshop.....	1 50	2 00
American Cottage Builder.....	3 50	3 00
Wheeler's Rural Homes.....	1 50	4 00
Burns' Ornamental Drawing.....	1 00	3 40
Manual of Drawing for Carpenters.....	3 00	2 00
Steam Engine Catechism.....	1 00	4 40
Grimshaw on Saws.....	4 00	2 75
Modern Low-Cost Houses.....	50	4 00
A Cozy Home.....	25	2 00
California Picturesque Architecture, No. 1.....	3 00	4 00
California Picturesque Architecture, No. 2.....	3 50	4 25
The Artisan.....	5 00	5 75

The following are justly recognized as standard publications. Some of them are perfectly new works, but we make the same general reduction:

	Price of Book.	With Cal. Architect.
Tredgold's Carpentry.....	\$ 7 50	\$ 8 25
Building Construction, 3 vols., Smiths.....	14 00	14 75
Picture-Making with Pen and Ink.....	4 00	5 25
New Cottage Homes and Details (Palliser's).....	4 00	5 25
Palliser's New Quarterly, per year.....	3 00	4 00

We can furnish any book printed at publishers' prices, and will send all books free by either mail or express.

High Houses in London.

A proposal to restrict the height of houses in London has been brought before Parliament by Mr. Whitmore, M. P. The scheme makes a distinction between streets less than sixty feet in width and those of greater width. In the former streets buildings are allowed to be erected up to sixty feet in height, but no more, except in the case of churches or chapels. Where the street or place is wider than sixty feet, the height of the building must not exceed the width of the street or place. If, however, the consent of the county council be obtained, this height may be exceeded. And, without such consent, the height of any building so erected may not be at any time subsequently increased so as to exceed the width of the street. It is made the duty of the district surveyor of the county council to inform the Home Secretary of any building intended to be erected contravening the provisions of the bill. The main object of the bill is to give to the county council powers to restrict the excessive height of buildings in existing streets in London. The county council has such powers in the case of new streets; but in the case of existing streets it is said that neither the county council nor any government department has any power to restrict the height of buildings.—*London Times.*

We notice an article on slow burning construction in the September number of the *Overland Monthly* by M. J. Bugbee of this city, which advocates an entire change in the building of houses. Mr. Bugbee contends that a radical improvement can be made by architects and builders in the erection of buildings which will make them almost fireproof, while the cost of the method will be increased not more than 8 per cent above the present rates.

THE New York Times publishes a long and earnest editorial about the new Municipal Court building for that city, expressing the opinion that a building erected in accordance with the selected design will be "discreditable to the city and to the commissioners who authorized its selection." That the idea of matching the architects against each other to see who would do it for the smallest percentage on the cost put the city in an "undignified and ridiculous position," and that the best way would be to appoint a new jury of real experts to examine all the designs over again, and if it should find that the one selected was really the best, to get up a new competition which would attract men capable of making better ones. Of course it is very unlikely that this advice will be followed, particularly as the commissioners have already bound the city to the architects whom they have selected by a contract which it would be a costly and difficult undertaking to break; and we cannot but regret that the *Times* should not have expressed its very judicious views before, not after the competition was decided. If a few daily papers so able and influential as the *Times* would come to the aid of the technical press in helping people to understand, before important competitions, the conditions which all architects of character consider essential to a fair contest, and the reasonableness and moderation of these requirements, the disgusts, disappointments and losses which attend nearly every public competition might be saved. The conditions are very simple. Nothing more is needed than to engage that the work shall be carried out, or if not, that a suitable compensation shall be paid the architect selected for the first place; that if it is carried out the author of the most meritorious design shall be employed to execute it at the customary commission of 5 per cent on the cost; that the award shall be made under the advice of one or more architects known to the profession as competent judges; and that time enough shall be allowed for men actively employed in other work to prepare, and carefully study, drawings, the nature of which shall be exactly stated in the programme. The original invitation of the Sinking Fund Commissioners allowed a very short time, about seven weeks, we think, for the preparation of a design which could not be properly studied under about as many months by an architect in ordinary practice, and no promise was made that experts would be employed to pass upon the merits of the designs. The consequence was that most architects of standing, after reading the programme, threw it into the waste-basket, where the programmes of public competition generally go in good offices, and for the same reasons; and the field was left, as it usually is, to the few people who are willing to do themselves the injustice of getting up a crude, hasty sketch, and committing it to fortune, without any assurance that it will be fairly judged.—*American Architect.*

Flash-light photography is being used by the sanitary inspectors of New York to obtain graphic pictures of the overcrowded condition of the tenement houses of that city.

CITY BUILDING NEWS.

Church and Twenty-first. Owner, S. Stemmer; architect, Wm. Mosser; contractor, Wm. S. Lott et al.; cost, \$1,000; sureties, J. E. Wells and Jos. Pandler, \$2,000; filed Aug. 30; signed Aug. 28; limit 70 days; to build; \$750 framed; \$750 ready for lathing; \$50 rear platform up; \$750 completed; \$1,000 35 days.

City Hall and Park avenue. Owner, Geo. T. Marye, Jr.; architect, Wm. F. Smith; contractor, S. H. Kent; cost, \$9,075; sureties, J. E. Wells and P. Blak; filed Aug. 22; signed Aug. 13; limit six months; carpenter work, \$1,000 second story joists on; \$2,000 roof is tinned; \$1,500 ready for plaster; \$2,956 completed; \$2,419 35 days.

City Hall and Park avenue. Owner, Geo. T. Marye, Jr.; architect, Wm. Smith; contractors, O'Connell & Lewis; cost, \$6,040; sureties, J. E. Wells and P. Blak; filed Aug. 22; signed Aug. 13; limit six months; cast iron; \$2,250 basement column set; \$2,250 first story columns set; \$1,500 35 days.

City Hall and Park avenue. Owner, Geo. T. Marye, Jr.; architect, Wm. F. Smith; contractor, C. C. Morehouse; cost, \$1,622; sureties, Jno. Tuttle; filed Aug. 22; signed Aug. 13; limit six months; plastering; \$300 brown coated; \$400 completed; \$422 35 days.

Clay, bet. Powell and Mason. Owner, C. Collette; architect, W. H. Armitage; contractor, Francis Buckley; cost, \$5,800; sureties, L. A. Mason, \$5,000; filed Aug. 10; signed Aug. 5; limit 75 days; 3 story frame; \$1,450 framed; \$1,450 brown coated; \$1,450 completed; \$1,450 35 days.

Dale Place and Golds. Gate Ave. Owner, Andrew Heneberry; architect, A. J. Barrett; contractor, C. N. Smith; cost, \$2,300; sureties, Frank P. Latson, \$1,000; filed Aug. 5; signed Aug. 1; limit 30 days; alterations, etc., 75 per cent to be paid as work progresses, bal. 35 days.

Cabots' Creosote Shingle Stains on Redwood.

"The use of Cabot's Creosote Shingle Stains in California is on the increase. We note that they have been recently used on the hotel Vendome at San Jose, and on Judge Venves residence at Los Gatos. In both of these cases they were used on redwood, and the architects, Jacob Lenzen & Son, San Jose, and the painters J. P. Jarman & Co. of the same city, write that they give perfect satisfaction, and that they cheerfully recommend them for similar work."

At the time the consolidation of the American Institute of Architects and the Western Association was decided on, the executive officers of the two bodies were instructed to meet, choose the time and place, and call a joint convention. There has been great delay in the matter, from the fact that differences of opinion exist as to the best place for the convention to meet. The secretary of the Institute advocates Washington, for the reason that it is neutral ground, while the president of the Western Association favors some city that is the center of the great business and commercial interests.

Straightening Walls of Buildings.

THE weight of the roof of the large gallery of the Conservatoire de Arts et Metiers pressed the sides outward so as to endanger the building, and it was requisite to find means by which the wall should be propped so as to sustain the roof. M. Molard contrived the following ingenious plan for that purpose: A series of strong iron bars were carried across the building from wall to wall, passing through holes in the walls, and were secured by nuts on the outside. In this state they would have been sufficient to have prevented the further separation of the walls by the weight of the roof, but it was desirable to restore the walls to their original state by drawing them together. This was effected in the following manner: Alternate bars were heated by lamps fixed beneath them. They expanded, and consequently the nuts, which were previously in contact with the walls, were no longer so. These nuts were then screwed up so as to be in close contact with the walls. The lamps were withdrawn and the bars allowed to cool. In cooling they gradually contracted and resumed their former dimensions, consequently the nuts, pressing against the walls, drew them together through a space equal to that through which they had been screwed up. Meanwhile the intermediate bars were heated and expanded and the nuts screwed up as before. The lamps being again withdrawn, they contracted in cooling and the walls were further drawn together. This process was continually repeated, until at length the walls were restored to their perpendicular position. The gallery may still be seen with the bars extending across it and binding together its walls.

Devisadero and Haight. Owner, Anita Fallon; architect, Fred E. Wilcox; contractor, John H. McKay; cost, \$3,620; sureties, Frank P. Latson and Geo. T. Shaw, \$4,810; filed Aug. 21; signed Aug. 19; 3-story building; \$2,155 framed; \$2,155 brown coated; \$2,155 completed; \$2,155 35 days.

Eighteenth and Noe. Owners, Annie Loy and husband; architect, Frederick Miller; contractor, Wm. McPhee; cost, \$2,600; filed Aug. 15; signed Aug. 14; limit 70 days; building \$500; enclosed \$2,000, 35 days.

Ellis and Gough. Owner, Jacob J. Rauer; architects, Chas. R. and John M. Wilson; contractor, James Geary; cost, \$9,275; filed Aug. 7; signed Aug. 6; brick and carpenter work for a 1-story frame \$1,000; first story joists on \$1,200; roof on \$1,200; brown coated \$1,831; white coated \$1,800, completed.

Ellis and Gough. Owner, Jacob J. Rauer; architects, Chas. R. and John M. Wilson; contractor, James Geary; cost, \$1,140; filed Aug. 7; signed Aug. 6; plastering, etc. \$570; rough work in \$285; accepted \$285, 35 days.

Ellis and Gough. Owner, Jacob J. Rauer; architects, Chas. R. and John M. Wilson; contractor, John S. Mackay; cost, \$17,050; filed Aug. 13; signed Aug. 7; signed Aug. 3; cement work, 75 per cent as work progresses, bal. 35 days.

Front and Vallejo. Owner, Mrs. E. B. Sanborn; architects, Wright & Sanders; contractor, John S. Mackay; cost, \$17,050; filed Aug. 13; signed Aug. 7; brick building and construction of iron safe, 75 per cent of work done, bal. 35 days.

Fourth and Bluxome. Owner, Peter A. Smith; architect, J. J. Welsh; contractor, John J. Dunn; cost, \$5,977; sureties, Behrend Joest and W. A. Messer, \$3,000; filed Aug. 10; signed Aug. 5; limit 77 days; carpenter work; \$1,400 framed; \$2,400 brown mortared; \$1,800 completed; \$1,577 35 days.

Fulton and Buchanan. Owner, N. B. Manville; architect, N. B. Manville; contractor, I. P. Klenck; cost, \$1,875; filed Aug. 15; signed Aug. 13; limit 30 months and 30 days; 3-story building \$450; framed \$450; plastered \$475; completed \$450, 35 days.

SEND FOR CATALOGUE.

Bancroft Way and Dana street, Berkeley. Owner, Chas. D. Allen; architect, A. W. Pattiani & Co.; contractor, A. W. Pattiani & Co.; cost, \$5,532; filed, August 14; signed, August 12.

Adeline Tract, Oakland, Tp. Owner, Mathew Lee; architect, A. W. Pattiani & Co.; contractor, W. R. Batten; cost, \$1,600; filed, August 15; signed, August 14.

Hirschfeld Tract, Alameda. Owner, H. Forsyth and W. C. Forsyth; architect, A. W. Pattiani; contractor, John J. Boyle; cost, \$1,200; filed, August 16; signed, August 14.

San Jose avenue and Chestnut street, Alameda. Owner, Fannie R. Morton; architect, A. W. Pattiani & Co.; contractor, A. W. Pattiani & Co.; cost, \$2,976; filed, August 16; signed, August 14.

Durant avenue and Dana street, Berkeley. Owner, Chas. D. Allen; architect, A. W. Pattiani & Co.; contractor, A. W. Pattiani & Co.; cost, \$3,532; filed, August 16; signed, August 16.

SAN JOSE AND VICINITY.

Residence for Mr. Tillotson, at Berryessa; \$4,000.

Residence for Joseph Holland, at Evergreen; W. J. Wolf contractor; \$3,000.

Residence for James Farney, on Ninth street; P. R. Wells, contractor; Garden City Mill Work; \$3,000.

Mrs. Knox Goodrich, building on First street; R. Summers, contractor for wood work, and W. J. Wolcott for brick work; \$10,000.

Dr. Urquhart, residence; C. R. Scammon, contractor; \$4,500.

Contractor Hazzard is erecting a five room cottage on Vine street for A. Perry, at a cost of 1,000; also a five room house for Mr. Wright on Minor avenue.

A cottage of five rooms for Frank Lyth; cost \$1,500; Ira G. Hazzard contractor.

A six room dwelling for Edward B. Lewis; cost \$1,800; Hazzard contractor.

H. H. Farnham is erecting a five room cottage at a cost of \$1,200.

J. Starbore has finished a cottage which cost \$1,000.

A house of four rooms is being erected by T. S. Lane at a cost of \$900.

A cottage to cost \$1,000 is being built for O. P. Cash by Ira G. Hazzard the contractor.

A cottage of four rooms is being built by Mr. Churchill; cost \$1,100; Hazzard contractor.

Robert Piggott has contracted to build for William Matthews a one-story frame building on the northwest corner of the Alameda and Autumn street for \$6,180.

Residence for James Wyatt, South Seventh street; J. Lenzen & Son, architects; A. Kelsey, contractor; \$4,000.

Cottage for Mr. Groves on Hamilton avenue; Frank Davis, contractor; mill plans; \$1,800.

Cottage for Mr. Miller on Delmas avenue; Frank Davis, contractor; \$1,600.

Cottage for Mrs. Lowe on Little Market street; Frank Davis, contractor; \$1,500.

Residence for Frank Davis, North Third street; day work, mill plans; \$2,400.

Improvements on First Methodist Church; J. Lenzen & Son, architects; Mr. Phillips, contractor; \$6,000.

Residence for C. P. Pauley on the corner of Empire and Tenth; day work, mill plans; \$1,500.

Improvements on residence of Mrs. Murphy. Columbet on Fourth street; J. Lenzen & Son architects; day work done by A. C. Bates; \$1,000.

Residence for J. Columbet on Fifth street; \$3,000.

The Hayes residence at Edenville, G. W. Page architect, to be built by day work at an estimated cost of \$75,000.

Cottage for J. Jacks on Tenth street, from plans made in the mill; J. J. Hill contractor; \$2,000.

Two cottages for J. R. Johnson, from mill plans; day work; \$2,500 each.

A cottage on North Fourth street near Empire, J. N. Stevenson, contractor and architect; \$2,000.

A winery for Mr. Blennike on the Stevens creek road, by day work; \$3,000.

Cottage for J. K. Smith, on Marliere street; Ira Hazzard contractor; \$1,200.

Cottage for C. Ballinghall, on Willow street; day work; \$1,000.

Residence for Tom Hughes, on Thirteenth street; day work; \$1,000.

Residence on San Fernando street near the bridge; J. A. Crawford builder; \$1,000.

Residence on Villa avenue, D. D. Briggs contractor; \$1,500.

Cottage for M. A. Brown; cost \$1,200; Hazzard contractor.

Cottage of four rooms for Dr. Rappe; \$1,500.

J. B. Capp is having a ten room house placed on his lots at a cost of \$5,000; Hazzard contractor.

A \$3,000 cottage for Benjamin Rordeau is to be erected by Mr. Hazzard.

W. E. Woods is having built a five room cottage; cost \$1,200; Hazzard contractor.

An eight room house is being built for M. A. Wischaar at a cost of about \$2,500.

O. O. Noble is having a six room cottage built at a cost of \$1,300; Hazzard contractor.

C. A. Blewitt is having a five room cottage built at a cost of about \$1,100; Hazzard contractor.

Contractor Hazzard also begun yesterday on a handsome six room cottage corner of First and Floyd street; which is to cost \$2,500.

Harry Keist is having a five room cottage built at a cost of \$1,000.

Mr. Souders, the owner of the Water Works, is also building a cottage to cost about \$1,000.

SANTA ROSA.

Contractor J. R. Nelson commenced the erection of a dwelling for D. Hodgson on Slater street.

T. J. Ludwig has commenced the completion of the brick block on Fourth street.

GRASS VALLEY.

S. T. Best's new dwelling house on Race street, near Auburn, is approaching completion. It will be neat architecturally as well as conveniently arranged.

Lumber for a residence for John Polkinghorn was hauled to-day to the Conaway tract on Race street.

Bennetts is building an addition to his dwelling corner School and Walsh streets.

Contractor I. T. Walker is making rapid progress with the large building he is putting up at the corner of Mill and Neal streets.

REYNOLDS & ADAMS,

547 Brannan Street,

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Parquetry Floors,

Wood Carpets.

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ENGLISH TILE FLOORS.

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SAN FRANCISCO, CAL.

Architecture.

In architecture, an art in which nothing but brains can excel, an art which requires years of study, an art which has no standard of grace but which is directly dependent on utility, an art whose creations derive a part at least of their majesty by mere sizes, our city can boast of many talented men, men who have lent to the city of to-day their creative talents and in the handsome, massive and magnificent buildings which line our streets, and in the palatial residences in every section we see evidences of their skill which would reflect credit on any city in the country.

From the low frame buildings of 1849, of any style and built of any kind of material, the advance has been rapid and steady.

One frame or flimsy brick building after another has been replaced by handsome, substantial structures until the city to-day presents as handsome an appearance as any city in the country. Every section of the country has its peculiarities and the architecture of each portion generally conforms to the climate, and the individuality of its people.

In San Francisco where sunlight is so essential to the comfort of a building, and where precaution must be taken against earthquakes, as against cyclones, snow and severe winters in other sections of the country, our local architects have mastered and overcome the difficulties attending and are certainly through their long experience and study in overcoming them, better fitted to draw plans and design buildings of a first-class nature than those of more eastern points, for this section. Evidences of their skill to erect first-class fireproof and earthquake proof buildings are every where apparent in this city and throughout the state, and many of our architects would attain prominence in any city in the country.

As in architecture, so in building, material has there been a decided improvement and except in rare instances do we find the old frame being put up instead of a brick or stone building with possibly the exception of residences.

The time has gone by when a property owner covered his lots with badly designed and badly constructed buildings provided he could fill them with tenants. He to-day has his buildings constructed in accordance with the most approved principles of modern architecture uses the best and most improved building material and he finds when his building is complete he can obtain tenants much more quickly and his building commands a much higher rental than the old and illy constructed buildings of former years. While the old-fashioned buildings are in many cases unoccupied, the buildings erected within the past few years with every modern convenience and built on the newest and approved plans of architecture are filled with first-class tenants and in many instances rented before entirely completed. In this issue, a number of illustrations are given of buildings erected by some of our leading architects, accompanied by a short biography.

These building show the various types of architecture of the city, in public buildings, residences and business blocks, each of them being models of their kind.

Percy and Hamilton.

G. W. Percy was born at Bath, Maine, July 5th, 1847. Having completed his education, in 1866 he entered the office of F. H. Fassett, architect, at Portland, Maine, after the great fire which had destroyed that city. Remaining there three years he removed to California in September, 1850, and located at Stockton where he practiced his profession until April, 1872, when he went to Chicago and entered into the employ of J. M. Van Osdel & Co., architects, of that city. He served with them during the busy years of rebuilding Chicago's burnt district until May, 1873, when he went to Boston, serving as Superintendent of Construction for Bradlee & Winslow.

In September, 1875, he returned to California and opened an office in this city, doing business alone until January, 1880, when he entered into partnership with F. F. Hamilton under the present firm name.

F. F. Hamilton was born in Addison, Maine, in 1831. He studied his profession under Professor Hammit Billings, a prominent architect of Boston, entering his office in 1867, and also served with several other prominent architects of that city until 1872 when he formed a partnership with J. B. Samuels, the firm being J. B. Samuels and F. F. Hamilton. They were the architects for several prominent buildings and erected numerous churches in Boston and vicinity. In September, 1875, he came to California and located in this city, being employed upon the new City Hall for three years. In 1878 he took a trip East, returning here again in 1879, and in 1880 formed the present partnership.

Among the prominent buildings erected by this firm are the State Insane Asylum Buildings at Stockton, Masonic Hall, Sperry Flouring Mill, Crown Flour Mills, all at Stockton. The Academy of Sciences (illustrated in this number), the Children's Play House at Golden Gate Park, new First Unitarian Church, corner of Franklin and Geary, Hayward's Apartment House on Larkin street, opposite the new City Hall, Hayward's Block on Sutter above Kearny, the Omnibus Cable Co.'s new car house corner Tenth and Howard, the engine house of the same company on Oak and Broadway, the largest of its character in this city, the buildings of the California Electric Light Company on Townsend and Clarence place and on Stevenson street; the Cunningham Building corner of Second and Stevenson, A. Hayward's magnificent residence at San Mateo, and numerous others in this city and different parts of the State.

Wm. Mooser.

The subject of this article is one of the oldest and best known architects in San Francisco.

He is a native of Switzerland, but came to California at the age of twenty years, arriving here in 1854. One of his first ventures in this country was his employment at the Navy Yard, in designing naval structures, and he has ever since been connected with the building interests of this city, Sacramento and Virginia City, at which latter city he erected the first brick buildings of any importance, such as the M. E. Church, Medine's Block, Wood & Wilson's and Wells, Fargo & Co., buildings.

From Virginia City, Mr. Mooser came back to San Francisco where he has been established ever since and in which place he has erected a large number of private and public buildings. In 1861, he with several other architects founded the San Francisco Architectural Society, and he is to day with the exception of one, the only charter member still actively engaged in the profession. Some of the most important buildings erected under his supervision, are as follows: The Metropolitan Temple, illustrated in this number, K. of P. and Pioneer buildings and Veranda Block, now in course of construction.

At Rutherford station, Mr. Mooser displayed his ability in constructing the famous cellars for The "Inglenook" Vineyard, for G. Niebaum, they being the first of their kind on the Pacific coast constructed almost entirely of concrete.

A. J. Barnett

Was born in St. Louis, Missouri, in 1853, and learned his profession with his father, G. R. Barnett, a prominent architect of St. Louis. He first came to this city in 1874, practiced here awhile, and then went to Chicago, being there associated with A. H. Piquenard, returning to his native city in 1882. He entered into partnership with his father, the firm becoming Barnett & Son, and while there was the architect for several prominent buildings. Finding the western country a better field for his talents he left for Portland, Oregon, and finally came to this city in 1883, since which time he has practiced here continually.

Among the many buildings built by him we mention the following: Oriel block, corner Market and Franklin; Green Valley Stables on Mission and Fifth, the largest livery stable in the city; the residences of Frank P. Dow, Laguna and California; F. T. Black, corner Page and Webster; E. W. Joy, Van Ness Avenue; E. Goggin, Van Ness and Jackson; Simons, Jacobs & Co.'s block a Merced, Cal.; a number of flats for D. W. Parkhurst; the Van Winkle lodging house, corner Turk and Jones; two residences for James P. Dunn at Leavenworth and Jackson; and the Oriel row of thirteen houses on Haight between Webster and Buchanan, of which we give an illustration. This row of houses has the distinctive architectural feature of each house differing from the other in design, no two being alike, the whole still harmonizing, and differ from most houses in not having the long flight of stairs so prevalent here. Each is an even-room house, and so arranged as to admit the sun in all the principal rooms. The row is a very handsome one, and reflects great credit on Mr. Barnett's abilities as an architect.

John M. Curtis,

The well-known architect, was born in 1852 at Warsaw, Illinois. At an early age he was left an orphan and thrown upon his own resources. He evinced great mechanical genius and entered into service with Bent & Garrity, builders and contractors, of St. Louis, Mo. After serving with them he entered the office of Mitchell & Brady, architects, of St. Louis, and studied the profes-

sion of architecture, remaining there until 1874, when he came to California and located in this city where he has remained in active practice ever since.

While he has been here, he has been closely identified as superintendant, builder, and assistant or chief architect of a great number of our largest and finest buildings.

He was assistant architect of the Baldwin Hotel and Theatre; supervising architect of the new City Hall and architect of the Santa Rosa, Sonoma county, Court House; the Mutual Relief building of Petaluma; Santa Cruz county buildings and jail; Wells & Fargo's new building on Folsom near Second street; the handsome new winery erected by Boyd & Davis, to be occupied by Kohler & Frohling (illustrated in this number) and many other prominent buildings and residences of this city and surrounding points.

He is a member of the San Francisco Chapter American Institute of Architects, Treasurer of the Pacific Coast Chapter of American Institute, member of the Technical Society of the Pacific Coast, and has gained a high reputation in his chosen profession.

Saltfield & Kohlberg.

David Saltfield was born at Keysboard, Illinois, in 1861. When but six years of age he removed with his parents to Germany and received his education in that country. He studied his profession in the various architectural schools of Germany, and in 1880 came to California locating in San Francisco. He served as draughtsman for four years with several architects of this city and then formed a partnership with Emil John, the firm becoming Saltfield & John which lasted one year. He then practiced alone a year when the present partnership was formed.

Herman Kohlberg was born at Beverungen, Westphalia, Germany, in 1855. After graduating at the High school of Lippstadt, Westphalia, he attended the Polytechnical High school of Brunswick, near Hanover, taking a three years course. He practiced his profession for several years in southern Germany until 1882 in which year he came to the United States. He served in New York city for one year and then came to this city in 1883.

For two years he held business connections with several architects of this city and in 1885 formed the present partnership with D. Saltfield. The firm are the architects for quite a number of fine buildings, notable among which are the following: Rosenthal building, of which an illustration is given in this number, the Rosenbaum building, corner of California and Front streets, Hackmeier's Hotel, J. Carstensen's building, 29th and Dolores, Simon Siegel's row of dwellings, five residences for James B. Hall, a fine business building for G. Woerz on Geary street, business house for A. Marx, Klose & Hillenbrand's Hotel, on Valencia street, B. Miller's flats on Post near Larkin, Victor R. Ulman's residence on Clay street, business house and flats for Dr. Abrams on Hayes street and others in various parts of the city. They received the premium for the design of the Court House at Stockton and are the architects for the jail in that city.

Charles I. Havens

Was born on Long Island, N. Y., in 1849, and came to California in 1856, locating in San Francisco. He entered the office of S. C. Bugbee & Son in 1864 and learned the profession of architecture, serving as draughtsman with them for five years. After that he was connected with John P. Gaynor two years and was with P. R. Schmidt for nine years more, entering into partnership with him in 1881, the firm becoming Schmidt & Havens, which continued for five years. During this time they erected numerous prominent buildings in this city and different portions of the State, among which were The Fulton, corner of Fulton and Larkin streets; The Longworth on Geary, the Haines' residence at San Mateo, the De Lavega residence, Geary street, D. N. Walters' residence, corner Sacramento street and Van Ness avenue, and others.

On January 1st, 1886, he commenced business for himself, since which time he has been practicing alone.

He has been the architect of some of our largest and most prominent buildings, notable among which are the following: The Carroll block, on Turk and Laguna, costing \$45,000; the Hayward residence, corner of Baker and Hayes streets, \$25,000; the Guadalupe Mill Co. building on Steuart street, running through to East street, south of Market, \$45,000; H. C. Talbot's residence at San Leandro, \$30,000; the Golden Gate Livery Stable, on Golden Gate avenue (illustrated in this number), \$80,000; J. J. Wells' residence, corner of Pacific and Steiner streets; Palmer block, on Mission, between Eleventh and Twelfth streets, \$25,000; and numerous others of like character.

He is a member of the San Francisco Chapter, American Institute of Architects, and ranks among the highest in the profession.

Henry Geitfuss

Was born in Thuring, Germany, in 1850, and studied his profession in Erfurt, Weimar and Berlin in the different architectural schools of those cities. While in Berlin and Schlessing he practiced his profession principally under railroad officials in constructing bridges and heavy masonry, thus seeing considerable work and thoroughly preparing him for his future career. In 1876 he left his native country, arriving in this city in the same year, where he has been in active practice ever since, working as draughtsman the first two years. Since he has been in business for himself he has been the architect for some of the best buildings erected here. Among the most prominent are the following: Kohler & Van Bergen's Winery on 3d street between Brannan and Townsend, the Wm. Tell House, Bush street; the U. S. Brewery; the Zwieg residence, corner of Howard and 23d streets; Vanlag residence on Howard, between 16th and 17th; W. Westerfelt residence, Fulton and Scott streets; John Cook's, Howard, between 20th and 21st; Sam. Steiner's residence on Eddy, between Franklin and Gough; the three-story brick building for stores and lodgings for John Van Bergen, corner 3d and Harrison which we illustrate, and many others.

Reid Bros.

Have been located in this city but a short time and consequently have not been identified with her architectural development. They have an enviable reputation in Chicago, Evansville and San Diego, where they have erected numerous buildings which reflect great credit upon their ability as architects.

The Coronado Hotel at Coronado Beach, which is illustrated in this number, is a monument to their architectural ability and is acknowledged as one of the finest hotels in the country.

Slate.

The material to be used for the roofs of buildings is an important item in their construction, as regards durability and resistance to fire.

Slate is gradually and deservedly taking precedence over all other materials for roofing purposes, as it will generally outlast the life of any building; it never requires painting, is a perfect resistance to fire, is storm proof, and imparts much warmth to any building covered with it.

The first cost is only nominally greater than shingles or other destructible material used, and it will outlast any other material fifty to one hundred years, being almost indestructible.

Another advantage of slate roofing is its handsome appearance, as noticed on the fine buildings in eastern cities, where it is almost universally used, besides requiring no painting or repairs, as a roof constructed of slate lasts for years, and therefore is far more economical in the end than the use of material formerly in vogue here.

The California Slate Company, whose offices are located at No. 9 Mission street, are prepared to furnish a superior quality of slate for roofing purposes in any quantities to suit.

Their quarries are located in El Dorado county, and expert architects pronounce the quality second to none, and generally better than any produced in the eastern states or Europe.

They are enabled to furnish any sizes that may be required of an average thickness of three-eighths of an inch. The color is a rich blue black, of fine grain and unusually smooth surface, which imparts to any building a graceful and handsome appearance.

Besides roofing this slate can be used for mantles, sidewalk tiles and general building purposes, and can be quarried large and thick enough for billiard table tops. It admits of a fine polish, and is withal a valuable addition to our building material.

Samples of this company's product can be seen at the Mechanics' Institute Fair, and at their office No. 9 Mission street, and parties contemplating building will do well to inspect this material, as they will be convinced of its superiority for roofing purposes.

The photo-engravings used in illustrating this number were made by the Globe Photo-Engraving Co., 419 Sacramento street. This is a new concern and is doing some excellent work.



Premises at Second & Folsom Streets.

JOHN M. CURTIS, ARCHT.

Furniture, Carpets and Upholstery.

The question how to furnish a house after it leaves the architect's or builder's hands is an all important one. What kind of carpets are suitable for this room, and what color or pattern for that; what style of furniture for the parlor, bedroom, library, dining room, etc.; and the kind of draperies, decorations, etc., suitable for each separate room.

The furniture and carpets of to-day differ very materially from the kind in use here in our early history. Then the plain sanded or plain board floor was the only carpet, and the furniture of the very cheapest kind. With the advance of civilization and the rapid growth of this city in wealth and refinement came the demand for the luxuries of eastern cities, and we find to-day as elegantly furnished mansions, supplied by the merchant firms in our midst, as in any city in the country. It is no longer necessary to send to the eastern points for the latest designs in carpets, furniture or upholstery, for our own dealers in these lines carry as large and complete stocks of such goods as any similar houses in the east.

The styles in furniture change with every year, each era having some particular fancy, thus the designs are continuously changing from the heavy massive pieces of former years to the elaborately carved, and then again to the delicately fashioned style of a century or so ago.

The furniture of to-day is of a severe and austere pattern, differing entirely from the ornamental and elaborate designs formerly in vogue, making quite a radical change, and withal has an elegant, substantial and luxuriant appearance.

As in design so does the style in the woods change, and the most fashionable and latest to-day is furniture of oak or antique oak, although the rich mahogany cherry and walnut are still called for. So in carpets, window shades, draperies and other decorations, each season brings new changes and designs, and richer material requiring the ingenuity and experienced taste of the artist to decide which is the most suitable for the correct furnishing of the several rooms. In eastern cities the furnishing of a modern residence is given into the hands of some well-known furnisher, who has *carte blanche* to use his skill and artistic taste in the complete furnishing of the parlors, library, bedrooms, dining rooms, etc., with some passing suggestions from the owner, and invariably when complete the house is better furnished, everything harmonizing more than it the different furnishings and decorations were supplied by so many different firms.

Such a firm carrying a stock of goods to furnish a house complete is the well known firm of W. & J. Sloane & Co., 641 to 647 Market street. The structure occupied by them is one of our modern business buildings, equipped with every convenience and arranged so as to display their elegant stock to the best advantage.

Their stock of furniture in parlor, bedroom, library and dining room sets is varied and handsome, every factory in the country being placed under requisition and their choicest productions chosen. The firm aims always to have the very latest and newest designs in the market, and are giving our residents here the most modern goods as soon as produced in eastern points. They

also manufacture furniture to order and furnish original designs.

In carpets their stock is also most complete, embracing English and American Wiltons, Axminsters and other kinds of all grades, from the cheapest to the most expensive. W. & J. Sloane & Co. are sole agents for Alex. Smith & Son's Co. of Yonkers, N. Y., American Moquettes. These carpets for beauty of design and durability cannot be excelled by any fabric, and are superior to many imported articles of a similar kind. In window shades, curtains, tapestries and upholstery goods the house has a most elegant selection of every shade and design; all departments in charge of experienced artists. The firm have furnished many of our leading residences and hotels, among which are the following:

The Palace Hotel furnished by them when opened with carpets throughout, the Baldwin Hotel and Theatre, the new California Theatre, the Hotel Del Monte with carpets and upholstery, and all the carpets for the Hotel Rafael, and the Stanford house at Palo Alto.

The firm always aim to give their patrons the very best and latest things in the market, and have won an enviable reputation in their particular line.

The attention of the public is called to the fine exhibit of the firm at the Mechanics' fair, where three interiors of parlor, dining room and chamber are shown.

Lumber and Building Materials.

The resources of the Pacific Coast in lumber are almost inexhaustible, for nearly all the varieties of wood grow throughout the different sections of the country, so that taken as a whole this quarter of the United States certainly is better supplied with lumber for the various uses than any other portion of the land. Lumber forms an important factor in the building interest, for no building is erected except that lumber enters into the construction in some form or other. The lumber to be used in a building should be, first of all, of good quality and well seasoned. Certainly no State in this country has finer qualities of lumber or a climate better adapted to the thorough seasoning of it than our own State of California.

Of the different kinds of lumber, redwood, of course, is more commonly used than any other. Our redwood forests are the wonder of the world, and millions of feet are annually cut for this and other markets. It certainly is the best building material of wood we have; and, besides its other numerous good qualities it burns slower than most any wood used in the construction of houses, necessarily making it a very valuable item in the erection of fronts of buildings, since its slowness to burn is the protection from fire.

It is also used for inside finish of buildings, admitting of ornamentation and polish for doors, panel work, wainscoting and other uses throughout the building.

Sugar pine on account of its scarcity in comparison with redwood—white pine, yellow pine, etc., is the highest price lumber for building material. It is stronger than redwood, has a fine grain, is free from pitch, and is used principally for doors, blinds, sash, etc.

The Curly and Burhl redwoods are two of the handsomest woods of our native forests, and are growing more and more popular, not only here but in Eastern and even foreign markets.

The curly redwood is obtained when milling, from the stump or first log in the tree, and runs from three to fifteen feet in diameter. It admits of high polish and has a very beautiful grain, curly as the name indicates, showing the tracery of fern leaves and heads of animals. This wood is being extensively used for interior finish, for panels in doors, counter tops, table tops, and all kinds of bedroom and parlor furniture.

Burhl redwood comes in round or oval pieces, from two to three feet in diameter, and is also a valuable addition to our fancy woods.

A firm making a specialty of this kind of lumber is Starbird & Goldstone, located on the corner of Market and Spear streets. This company was established in 1872 and has been prominently identified with the lumber and building interests of our city ever since. They are wholesale and retail dealers in all kinds of lumber and building materials, making a specialty of sugar pine and also of Curly and Burhl redwood for Eastern shipment. Besides these they carry a full and complete stock of building material, such as lath, shingles, etc., and dry dunnage for ships.

They solicit the trade of the builders of this city and the coast, and ship largely to Eastern and foreign points.

They have supplied a large number of houses with their lumber and have lately shipped 75,000 feet to Liverpool and 50,000 feet to London of Curly redwood and Burhl, which are prized very highly there and are rapidly superseding other fancy woods. In this city these woods have been used quite frequently in some of our prominent residences, notably in W. T. Coleman's, corner of Fillmore and Pacific streets, for paneling in the halls and library.

Owners and contractors would do well to make a more liberal use of these handsome native woods in the finish of their own buildings than they have heretofore—thereby encouraging our home industries in this branch of industry as well as in others.

Hoop Clamps for Large Tanks.

The invention of Mr. Asa R. Wells, which is illustrated in this number, supplies a great want, particularly in dry and hot climates, where shrinkage of lumber is considerable.

No device heretofore in use for tightening hoops has been satisfactory, for the reason that the draft was not straight and therefore not direct on the hoops.

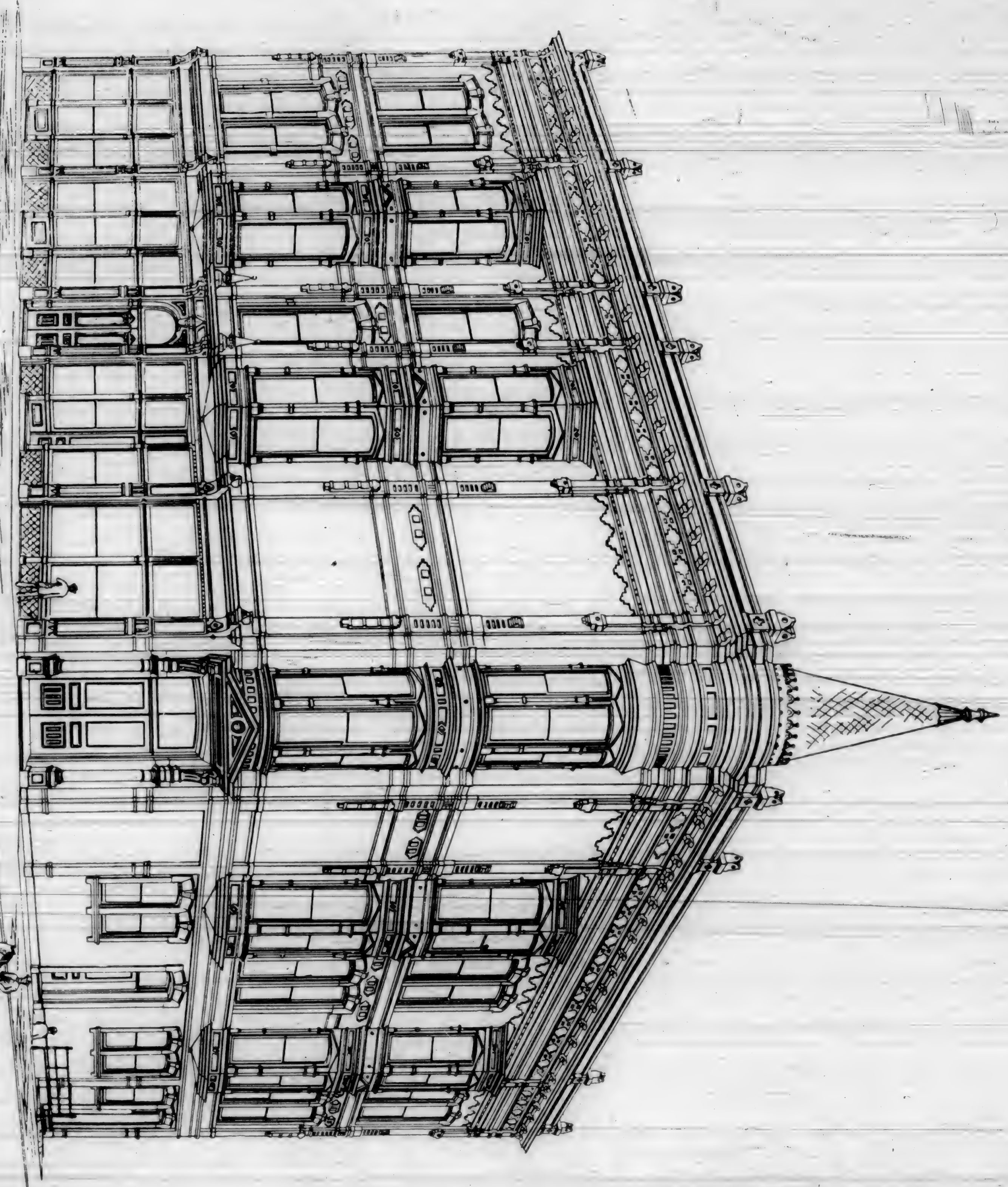
The advantage of a clamp hoop over a riveted hoop, particularly in heavy bands for large tank work, must be apparent to all.

To tighten a riveted hoop requires tools, scaffolding and capable men. It also mars the paint and injures the iron. To tighten with a clamp, working freely, requires simply a ladder and a wrench in the hands of anybody.

Mechanically considered, the device may be described as a right and left draw buckle, acting on ball and socket joints. It therefore works equally free, powerfully and effectually on long or short draft and on large or small circles. Practically considered, this device has proved a great success. By its use Wells, Russell & Co. have set up some tanks as large as 36 feet in diameter, which are perfectly water-tight.

JOHN VAN BERGENS-Block-Third & Harrison.

H. GELFUS, ARCHITECT.



Window Glass.

One of the most important items which enters into the construction of a building is glass, both plain and ornamental, and consequently in the letting out of contracts builders should certainly see that the very best kind obtainable is to be used. Nothing adds so much to the appearance of a building as clear, transparent window glass, and tenants certainly appreciate rooms which have windows of clear and perfect glass. The facilities for obtaining the best glass manufactured, are as great in this city as in any city in the country, and there is therefore no excuse for not taking advantage of the opportunity offered and using first-class material, which is certainly the most economical in the end.

The establishment of Fr. H. Rosenbaum is one of the oldest and most reliable in the city in this branch of manufacture, having been established in 1862, being then located on Sacramento street near Front. In 1864 he removed to Battery street near Washington, but quarters being too small another removal was made in 1868 to his present location, 567 Market street.

The premises occupied consist of three floors 30x170 feet in dimensions, with an additional warehouse on Stevenson street in the rear 50x100 feet.

A large and complete stock is constantly carried, consisting of French, German and English plate glass, window glass, mirrors and looking glass plates, rough plates for sidewalks, corrugated glass for skylights, colored, enameled, cathedral and prismatic glass in all desired sizes.

On the second floor is located the factory, which some six months ago was enlarged and thoroughly equipped with the latest and most improved machinery for silvering, beveling, ornamental cutting, grinding, embossing and crystallizing glass.

Skilled mechanics are employed in all the various departments, and orders are filled promptly and on very short notice. Estimates are furnished on all contracts on parlor and bar room mirrors of all kinds.

Among the prominent buildings furnished by this house we mention the following, which give evidence of artistic and first-class workmanship:

The First National Bank building, with crystallized, beveled and ornamental glass; the Meyer residence, California and Gough streets; A. D. Moore's residence, Pacific avenue and Davisadero street; J. A. Hooper's residence, Laguna and Washington streets; the Mareschal Neil House, corner Ellis and Jones streets; the Collins residence, corner Alice and Durant, Oakland; A. D. French's residence, East Oakland; Mr. Hanson's residence, Redwood City; M. Rosenbaum's building, now in course of construction, corner of California and Front; the Bancroft History building, Market street, McDonough Block in Oakland; Capt. Niebaum's villa in Ingewood, Napa county, and many others.

Mirrors from this establishment adorn the walls of some of our most palatial homes, and massive plate glass windows which add so much to attractiveness of stores owe their introduction in a great measure to the enterprise of this pushing firm.

Wire and Iron Fencing and Ornamental Work.

Wire and iron are rapidly superseding wood in most cases where used for ornamental purposes, such as fencing, railing, roof cresting, etc. The uses wire and iron can be put to are innumerable, and from being the more durable admits of more ornamentation than wood for the purposes used. Wire and iron are used for fencing, for houses, stair railing, divisions, floor rails, desk and counter railings, panels of elevators, elevator guards, skylight guards, for protection against fire and breakage of glass, for the covering of basement windows, gallery fencing, stores and other numerous uses.

Wire fencing, and more especially iron fencing, is rapidly taking the place of the old wooden fencing formerly used, and is a vast improvement. It is highly ornamental and durable, being almost indestructible and the more economical.

In iron fencing there are constantly new designs being manufactured, the variety being without limit, as the wire can be twisted by the new machinery now in use into any shape or design imaginable.

The wire works of D. D. Wass, 141 and 143 First street, are the largest in this line on the coast and were established in 1884. The works have been enlarged to accommodate Mr. Wass' increased business and are thoroughly equipped with all modern appliances and machinery for the manufacture of his various specialties and products, besides constantly supplied with new machinery as the occasion demands. He gives employment to a large force of hands and is prepared to manufacture on short notice all kinds of wrought iron and wire fencing, roof crestings and finials, wire window guards, gates, skylight guard work, desk, counter, bank and office railing, ornamental brass work, gas-pipe rail, show window fixtures, coal and sand screens, founders' riddles, spark guards and fenders, and also light ornamental wrought iron work.

He also makes a specialty of all kinds of artistic brass and nickel-plated work in the shape of gates and wickets. Mr. Wass has filled a large number of contracts and furnished the wire and ornamental iron work on a great number of buildings in this city and in various parts of the State. He has just finished all the wire work on the new cruiser "Charleston," consisting of some 300 mess and clothes lockers, wired the same vessel for an electric bell system, furnished the wire work for the bank of Hanford, Cal., consisting of counter railings, wickets, partition work, doors, etc., also the elevator work in the Walters' building, Sullivan estate building on Bush street, Huntington & Hopkins building, Golden Rule Bazaar, and has the contract for furnishing the new Asylum building at Agnews with wire window guards, besides other numerous and extensive contracts.

Parties desiring work of this nature will do well to call upon D. D. Wass and examine the class of work turned out in his establishment.

Hot Water Heating.

The old idea that we need no artificial heat in our houses in California has long since been exploded, and it is no longer a question of *shall we heat*, but now shall we heat our houses. The open grate or fireplace, the store and hot air furnace systems have long been used on this coast. Later the steam and hot water systems have been conspicuously brought forward and are becoming more popular and general in their use. For private residences the hot water is the best, giving a mild equable temperature superior to the stove hot air furnace or the steam systems; and where it has been properly constructed, for comfort, economy and healthfulness, it has no equal. Two things are requisite herein to its success:

First—The apparatus must be adapted to the wants of this coast, and herein the fuel, the water and climate must be considered.

Second—The system requires more care, judgment and skill in its construction to ensure success than either of the other systems, for unless the circulation be perfect and the distribution well balanced the system will be faulty and undesirable, the heat slow and unequally distributed, and the consumption of fuel unnecessarily increased.

This skill and judgment is obtained only by experience. The principle of the hot water circulation is entirely unlike that of steam. Neither the steam fitter, the plumber, nor the hot air furnace men have any practical experience adapting them for this work. *It is a trade by itself*, and the plumber or hot air furnace agent who contracts to put up a hot water apparatus generally experiments at the expense of the owner of the building.

The hot water system was introduced on this coast eleven years ago by C. D. Harvey, who brought from the eastern states the latest and most desirable appliances then in use for the hot water warming of houses.

It soon became apparent that the different climate of the Pacific coast, the different fuel and the different surroundings required a different form from those used in the eastern states, where continuous and strong fires are maintained from early fall until late spring.

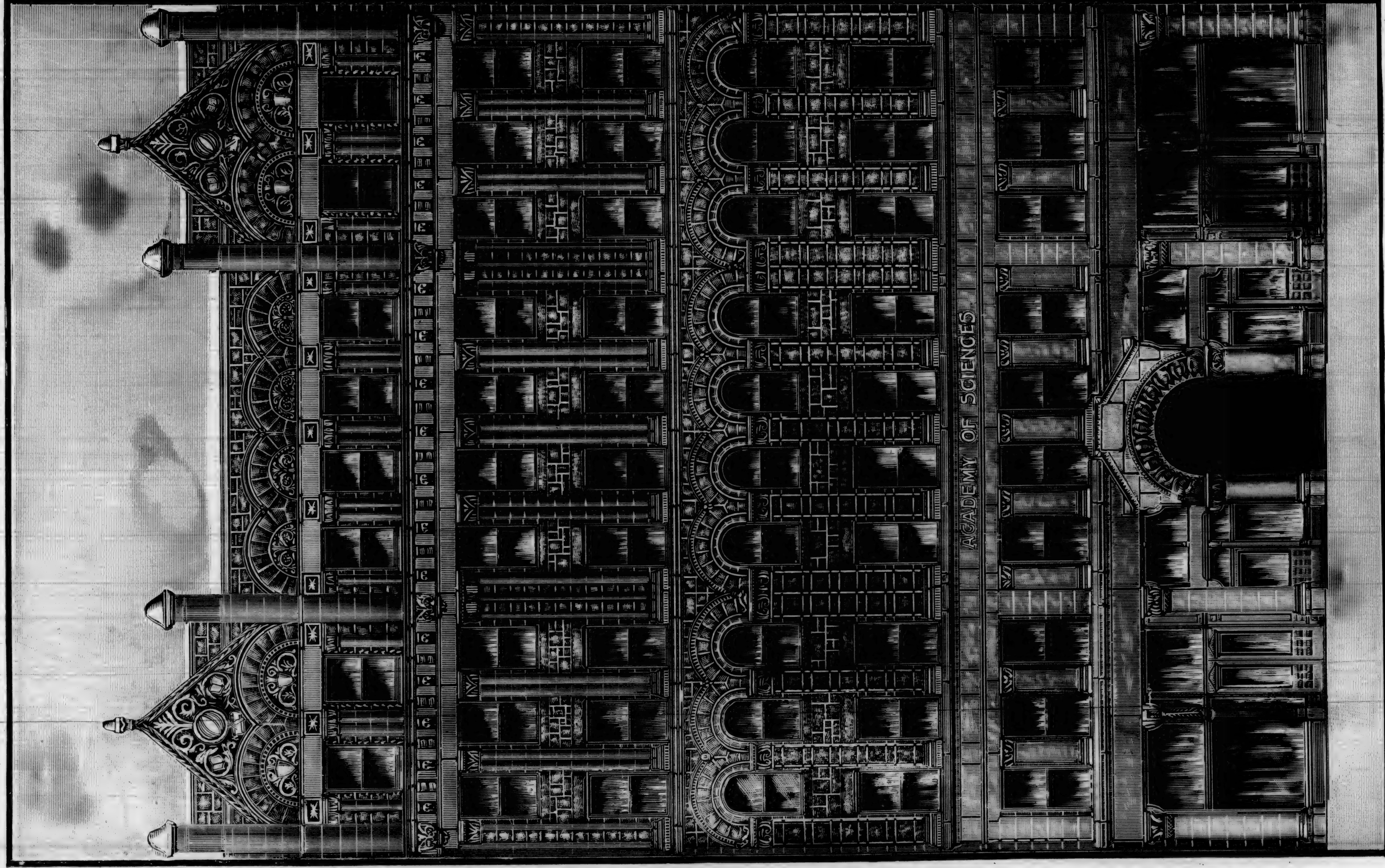
The hard coal burners were illy adapted to the soft bituminous coal used here, and the impure water of San Francisco and Oakland required a different construction of heater. Eleven years of practical labor and observation in this work has enabled the industrious inventor to detect and obviate many of the objectionable features of the eastern apparatus for our California trade, and in the face of strong competition to establish another local industry on our coast.

The reputation of the *Harvey hot water heater* was no sooner established than the eastern houses flooded the market with their same discarded goods, operating through local agents who have recently, and with little or no experience in this system except such as has been acquired in the general plumbing trade, become the advocates of the hot water system.

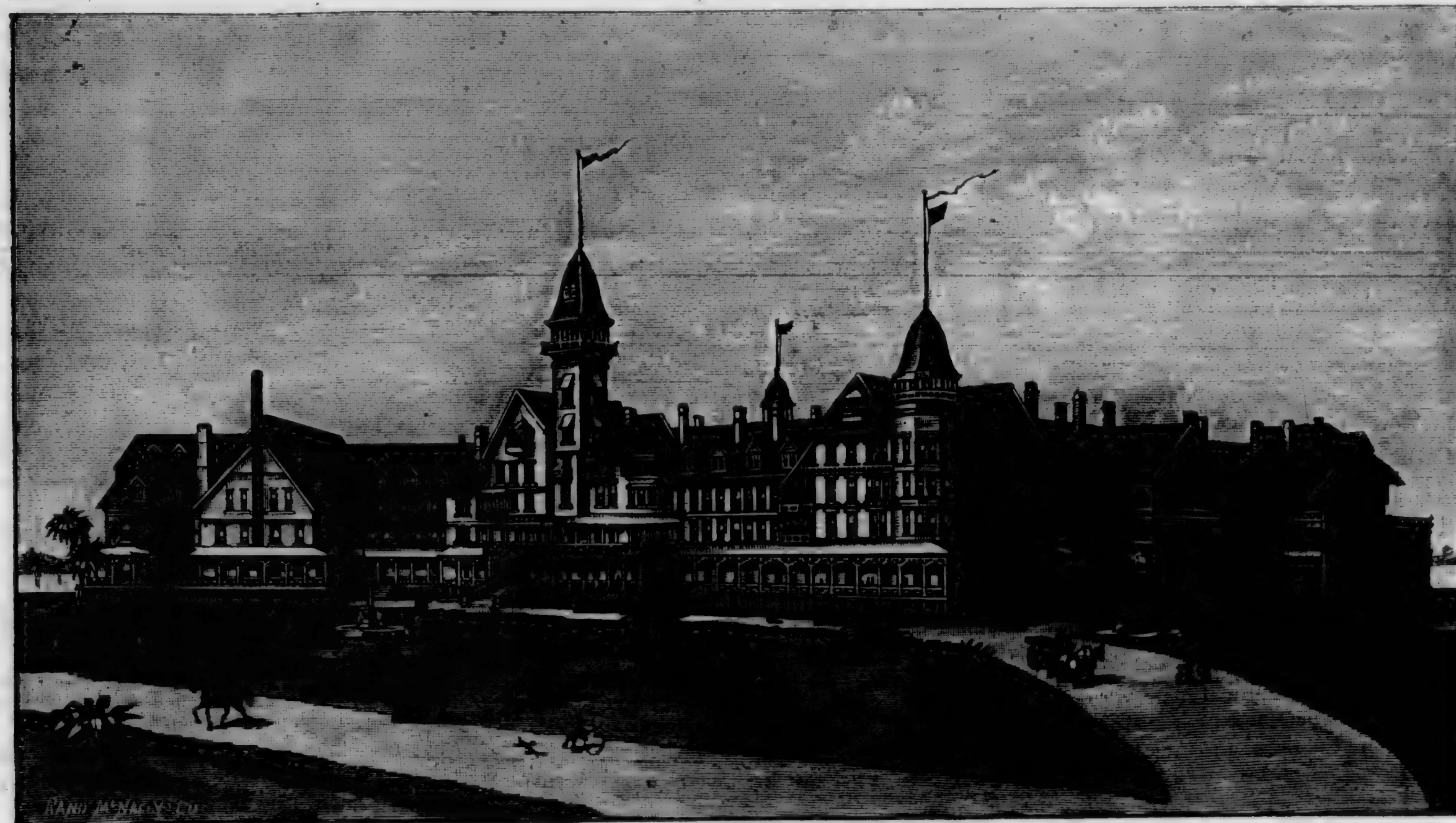
The first heater introduced by Mr. Harvey was formed by a series of flat cast iron plates, or water chambers, placed horizontally over the fire-box in stacks, around and through which the fire passed in its course to the chimney.

September 15, 1889.]

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.



THE NEW BUILDING FOR THE CALIFORNIA ACADEMY OF SCIENCES, SAN FRANCISCO, CAL.
PERCY & HAMILTON, ARCHITECTS.



Hotel Del Coronado, Coronado Beach.

REID BROS. ARCHITECTS.

This was economical in fuel, quick to heat and satisfactory for the first few months. Soon however the sediment from the water was deposited within these sections, making the fire less effective and the deposit increasing. The lower section nearest the fire cracked or burned out after three or four years' service, so their removal became a necessity.

Next the form of the casting from a flat to a curved surface was adopted, using return flues and providing for the deposit of sediment below the direct fire surface.

This form lasted longer, but the same results followed though less frequent. It was therefore apparent that the cast iron surfaces could not be relied upon, where the heating and cooling of the surfaces followed in such frequent succession as in our climate. The iron becoming crystallized was bound sooner or later to crack.

Next the tubular heater, constructed of two-inch wrought iron pipe, containing a smaller pipe inside to secure a circulation, was used. By this heater the tendency to crack was obviated, but the deposit of sediment and the increased friction retarding the circulation between the two pipes, after a short trial, stamped this as only a partial success.

Three years of experience and study have demonstrated that the successful hot water heater for the Pacific Coast must be accessible in all its parts, within the water chambers as well as upon the few surfaces outside. The removal of the sediment inside the heater is quite as important as the cleaning of the soot from the outside surface. While both are non-conductors of heat and cause a needless waste of fuel, the sediment will cause the cast iron to crack and the wrought iron to burn out and will also retard the circulation by causing unnecessary friction within the pipes and chambers.

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All the different forms of heater above described, or heaters constructed upon similar plans, are extensively advertised on this coast by Eastern houses through local agents with no practical experience with these goods.

The flat cast iron sections or stacks over the fire box, as well as the telescoped pipe heaters in their various forms, will all repeat the same results over again and the purchasers will pay for the experiment while the agents, unconcerned and unconscious of the inevitable result, continue to advocate, advertise and sell the same.

"Where ignorance is bliss 'tis folly to be wise," especially if the purchaser pays the price and the agent pockets the profit.

The hot water system is undoubtedly superior to any other if properly constructed, and no greater mistake can be made than to suppose that a plumber or other pipe fitter can satisfactorily plan and construct this

work, relying upon Eastern appliances and Eastern plans where practical experience is lacking.

Mr. Harvey has invented and manufactures a wrought iron tubular heater so constructed that every part inside and outside can be reached and cleaned, and any tube can be removed and replaced with a new one without disconnecting the heater or disturbing the brick work or sending to the factory for a duplicate section in case of a crack or defect, as would be necessary with an Eastern heater. Mr. Harvey has also the exclusive agency for the celebrated Bundy Hot Water and Steam Radiator, including the New Elite, which he uses in his local business or furnishes to the trade. This radiator is used more extensively than any other, over 11,000,000 square feet now being in use, and are made in a greater variety of forms than any other manufactured.

Mr. Harvey is doing exclusively a hot water and steam heater business, using the best material, the latest devices and doing only first class work which his eleven years experience will corroborate. His connection with the Griffing Iron Co., the largest manufacturing firm of hot water and steam heating radiators in the United States, ensuring him the latest, best and most improved appliances from the East in connection with his own inventions here.

Elevators.

The building of elevators has shown as much progress and improvement as any other of the conveniences of the modern building of to day, and a building without a first-class elevator is as much a novelty as one in former years was with one. The old rope hand hoist first in use, gave way to the friction clutch hand hoist, which is still in use in some buildings for freight purposes, but is being replaced by the more modern elevators now being almost universally erected in all first-class buildings.

In passenger elevators, the old style horizontal cylinder hoist has many disadvantages and is a very dangerous machine. It has a large and small drum and a coil continually revolving around two small drums, causing it to crack and break, and of a necessity the cage must fall, depending entirely upon what precaution is taken to prevent or stop its rapid descent.

Another disadvantage in these elevators has been to use only one main rope for the cage and two or more drum ropes. This machine, which is called a pull machine, is so constructed that the water enters on the rod side of the piston, which makes it very dangerous, for should the piston rod corrode from the action of the water, or become fractured by use, which often happens, the cage drops and endangers life and limb. There can be no question, that as compared with other large cities in this country, we are behind the times in making compulsory provisions for the safety of our citizens, and steps should be taken to compel the use of the best and most improved appliances in elevators that insure absolute safety to our citizens.

Undoubtedly the safest protection against accident is the Safety Air Cushion and Air Brake attachment supplied by the Ellithorpe Air Brake Company, of which the firm of Wm. H. Birch & Co., 119 Beale street, of this city, are the sole agents and manufacturers on this coast.

This air cushion, which can be built in in any elevator now in use, is simplicity itself; there is absolutely nothing to get out of order or to cause death or accident through inattention or neglect; there are no springs to rust or wheels to oil or other contrivance to manipulate. The cushion has been tested all over the country, both intentionally and unintentionally, and never when the cab has been started, even from the top of the highest buildings, has an egg been broken, a glass of water spilled or the smallest damage happened. This air cushion is not a contrivance to stop the cab in transit. If the cable breaks or the cab starts on its fearful fall, it is allowed to go, but as it approaches the bottom it is gradually and safely brought to a halt by a scientific application of air caused by its own velocity, and this without jar or commotion of any kind.

The two safety devices known as the Ellithorpe Air Brake and the Ellithorpe Air Cushion have stood the tests of hundreds of the most severe and practical trials, and in no single instance have they failed to operate successfully. The air brake is simple and easily applied. It operates upon a different principle from the air cushion. The air brake while operated by means of compressed air prevents the cab from falling more than

a few feet, stopping it gradually without the slightest concussion, the effect produced being precisely the same as applying the Westinghouse brake to a train of cars while under a high rate of speed.

There can no longer be any excuse for loss of life from the falling of elevator cabs, for it has been fully and practically demonstrated that either the air cushion or air brake will effectually remedy this great danger.

Wm. H. Birch & Co., 119 Beale street, the agents for this important invention, have placed them in the following buildings: The Pacific Union Club, the Hillsdale house on Sixth and Jessie, two in the Rosenthal building on Market street, the Merchants Neil house corner Ellis and Jones, First National Bank building, New City Hall, this city, and the Fresno Savings and Loan Society building, Fresno, all of which have been placed since November last and successfully dropped. The latest trial was in the Pleasanton Hotel where the apparatus was tested in the presence of all the guests, the cage having been dropped ninety-four feet; and also the New City Hall elevator in the presence of the mayor of the city and other officials.

Patent Chimneys.

The kind of chimneys to be used, in the construction of a building, is and should be an important item with the architect, contractor or owner of the building to be erected for upon it depends to a great extent the security of the building from fire and withal the comfort of the tenant.

Great improvements have been made in the building of chimneys. The old style brick ones which were brought up from the basement to the roof have been supplanted by the introduction of the patent modern ones which are now used almost exclusively in all modern buildings.

J. Browell, No. 727 Montgomery street, is the owner and patentee of Browell's Patent Chimneys, which have been endorsed by the Board of Supervisors and approved and recommended by the Fire Wardens, Insurance Companies and leading architects throughout the state generally.

This chimney is constructed on the inside of terra cotta of the very finest fire clay, and has an outside lining of galvanized iron with an air space from the bottom to the top above the roof, while most other patent chimneys are perforated with holes, thereby sending all the hot air through the building, having no escape above the roof, thus making them a veritable hot air bed and consequently very dangerous.

In former years the pipe manufactured was of inferior quality, but now through years of experiments and experience, this inferiority has been overcome. The pipe used by Mr. Browell in the construction of his patent chimney is made of the very best terra cotta and is perfect in every respect, both as regards to safety from fire and to strength and lightness.

His chimney can be placed in any part of the house or attached to the outside of any building, being fastened to the building by means of iron rods or straps making them perfectly straight. The bands which are put around the meeting ends of the sections of pipe are carefully filled with cement on other fireproof substances, thereby making

the chimney absolutely safe and there has never been an instance of fire through means of defective flues where his chimneys have been in use. These chimneys are also constructed in such a manner, that they can be readily used as heaters and ventilators and are unquestionably superior to anything of the kind invented in the United States. They are the only chimneys in which bands and fillings can be used to make a smoke and air tight joint, and in which iron rods or straps can be used for fastening the chimney to a building, all others being infringements.

Mr. Browell is the patentee of five patents covering every improvement that can be made and the chimneys he is now using upon the various buildings in this city and vicinity are as near perfect as can be made. They can be shipped to any part of the country and put into position by any mechanic. Owners of buildings should see to it that in specifications of their buildings, Browell's chimneys are specified and used.

In many instances where the Browell chimney is called for in the specifications, a cheaper and inferior chimney is often substituted and architects or owners should investigate more closely into such matters and see that the Browell chimneys are used in every instance. It would also be to the interest of the insurance companies to pay some attention to the kind of chimneys used on buildings upon which risks are taken.

While probably more expensive than other chimneys they are much cheaper in the end and save considerable future repairs and trouble.

These chimneys are in use upon the principal buildings of this city and vicinity, prominent among which are the residences of M. Hopkins, Senator Stanford, W. H. Crocker, the London and Paris Bank building, the Harbor Commissioners offices on the wharves, and are now being used upon the building erected by Henry Matthews, on Ellis, between Paul and Mason streets.

Artificial Stone Pavements.

In keeping with the general advance and progress of architecture has been the improvements of our streets and sidewalks.

From the time of uneven, unsightly decaying planks, with projecting nails, to the era of brick pavements covered with soft composition of almost as uneven and unsightly appearance as the former, to the handsome, hard and durable artificial stone pavements of the present day, our city has shown a gradual and steady advance.

A handsome modern sidewalk in front of a structure is as necessary to its general appearance as its interior finish, and owners of buildings, in order to add to the value of the same, can no more neglect this important feature than any other which goes towards adding to the comfort of its tenants.

No material for sidewalks is equal to first-class, well laid artificial stone. It is smooth, clean, hard and durable and the cheapest and most economical in the end, for when laid by honest and experienced contractors it will last a lifetime.

Low prices mean the use of poor materials, not only in pavements, but in everything else.



Golden Gate Avenue Block. CHARLES I. HAVENS, ARCHITECT.

When the Schillenger patent expired several years ago numerous parties rushed in with little or no knowledge of the business and took contracts to lay artificial stone pavements at almost any price they could get, and the natural consequence was that numerous property owners jumped at the chance of saving a few dollars and accepted their bids. The result is that these sidewalks are crumbling to pieces, many of which have been laid less than a year, while those laid by first class firms have stood the test of over ten years, the walks being as good as when first laid.

If property owners would consider that there is at the utmost but \$20 difference between a first class job and a ten cent sidewalk, one lasting an ordinary lifetime and the other but a few years, surely there should be no hesitancy in choosing the better. It is wise to learn from others' mistakes, and the teachings from this experience is that a first class artificial stone sidewalk is undoubtedly the best and cheapest in the end, and the employment of only skilled and responsible contractors, whose work has shown its merit, should be given the contracts for laying the same. Let owners give the laying of sidewalks to responsible parties only and they will never regret the difference in cost.

Among the first class concerns engaged in this interest is the Gray Bros. Artificial Stone Paving Co., established in 1881 and incorporated in 1889, with offices at 316 Montgomery street, this city, and branch offices at No. 1 South Fort street, Los Angeles, and 1506 Park street, Alameda. They have laid some of the best and handsomest sidewalks in the city and besides take contracts for concrete foundation work of all descriptions. They use none but the very best material, employing none but skilled and experienced workmen, of whom they have upwards of 150.

They import the very best cement direct from England and Germany and own their own vessels which transports the immense amounts of gravel used from the various beaches. All of their work is guaranteed for ten years and they do nothing but first class, honest and durable work. Among the numerous pavements laid by them are the walks of the Grand Hotel, those corner of California and Kearney streets, Bush and Montgomery, five blocks on Van Ness avenue, between Golden Gate avenue and Vallejo, the Nightengale Block on Haight street, around the residences of P. B. Cogswell, A. D. Moore, F. A. French, and numerous others in this city. Among their large contracts was \$187,000 worth of work in Santa Monica, Colton and Riverside and five miles of walks in Alameda and San Rafael.

A BUILDING has just been completed in Columbus, Ohio, in which a novel and beautiful feature in architecture has been introduced. The front of the building has a medallion formed of pressed brick, the face chipped off, giving a surface that resembles rough-faced red sandstone. The brick, while equal in appearance to stone, will retain its beauty longer, as stone grows darker with time. Many architects and builders who have visited the building, express great admiration of the effect.

Pressed Brick and Terra Cotta.

While building has progressed rapidly on this coast during the last twenty years, it has been with an eye more to the immediate than future service.

The necessity of providing for a rapidly increasing population too often results in the construction of the cheapest structures possible, with an appearance of solidity which is merely a veneer of zinc and paint. But with an increase of wealth and in emulation of older cities, the more thoughtful and the really more economical of our people are impressed with the more enduring qualities of architectural construction. The architecture of a city usually corresponds with the character of its inhabitants.

There must necessarily be progression or decay and there is as much progression in the art of making bricks and terra cotta and in the style of them for building purposes as in anything else in the building interest.

The sun-dried adobes have given way to the common burned brick and they still are the cheapest and most durable of building material.

But the finish of the common brick is not as acceptable to the artistic sense as it might be and to cover its defects this city has covered the fronts of its buildings with mud in the vain attempt to make them resemble stone.

There has been some good excuse for this as the fine finished brick, such as Philadelphia, Baltimore and St. Louis produces have been too expensive to use on account of high freights, etc., and the material produced on this coast, heretofore, has been of a much inferior grade.

Matters are changing here now, new manufactories are in operations and builders need no longer send east for their fine pressed brick and terra cotta as these articles can now be obtained in better quality and at much cheaper rates at their doors.

The Union Pressed Brick & Terra Cotta Co., have just completed large and extensive works at Vallejo, with their general offices located in the Flood Building, room 31, in this city, and are turning out some of the finest work ever produced in America.

This material must be seen to be appreciated as nothing approaching it has been used in this city. The brick is being used in the Concordia Club building and is called for in the specifications of other buildings in the course of construction.

The machinery adopted by this company is of the latest improved patterns, which facilitates the making of brick and terra cotta of the finest quality at the lowest cost.

The material used in the manufacture is free from alkali in any form and produces an article, which for color, uniformity of size, texture and strength is not excelled, if indeed equalled, in the world. The brick is of a deep rich, red color, with smooth, almost polished surface, firmer than granite, so homogeneous that it is easily cut, and so hard that it withstands a pressure of 16,000 pounds to the square inch. The terra cotta is of the same shade as the brick, and when struck with a hammer rings like steel. The modeling, which is done by one of the foremost artists in America, is beautiful in design and magnificent in execution. The excellence of the production of this company will be their chief advertisement, and the builders of this coast are to be congratulated upon being able to procure such beautiful and durable material.

Fire Protection.

Protection against fire is and should be the first consideration of every owner and tenant of a building, and every precaution should be taken to use such contrivances as will extinguish fire in its incipency with the least damage to building or stock.

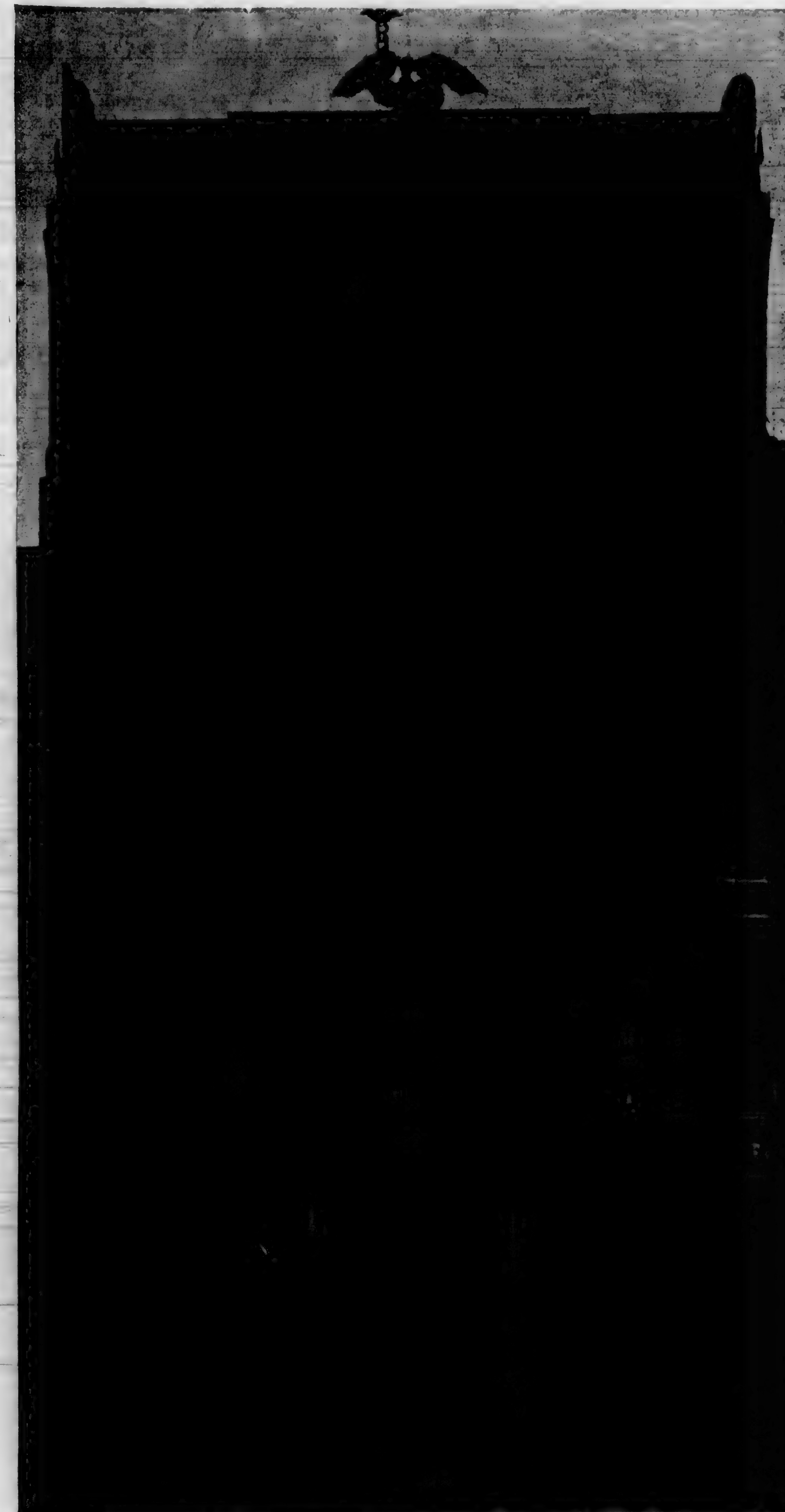
A piece of fire apparatus should be perfect in all its parts and if any part be defective the whole is defective. It should be simple in construction without any parts to get out of order and be ready for use at a seconds' notice. Such an apparatus meeting all these requirements is the "Paragon Hose Reel," of which W. T. Y. Schenck, 222 and 224 Market St., is the inventor and manufacturer.

This reel is designed for use in warehouses, public buildings, mills, manufactories, hotels, etc., and especially in buildings where there are times when only a watchman or a few persons are about. Quick and sure work is an absolute and fully recognized necessity for all inside fire protection; and by actual and repeated experiments by green hands, with this reel and hose, water has been turned on, 100 feet of hose pulled off, and a stream of water put on a fire in thirty seconds. It is permanently fastened to the wall, out of the way, supported by suitable brackets, and connected directly with the supply pipe through a hollow journal and packed joint, which allows the water to pass freely into the hose being connected to the hollow journal inside the reel and reeled up.

Upon the discovery of a fire the party present quickly turns on the water by the valve attached to the reel, takes the hose pipe and runs off towards the fire, the hose running off the reel freely, without a twist or kink, and the water following immediately, thus saving the very valuable time usually lost in straightening out the kinks and twists in the hose and in going back and turning the water on. This reel and hose are acknowledged by the Insurance Union to be the most perfect inside fire protection it is possible to procure and they so take them into consideration in fixing insurance rates.

The Paragon Hose reel is equipped with the Eureka Mill cotton hose, which does not deteriorate with age, does not break in the kinks, does not burst and is *always* reliable. It does not burn or melt when in close proximity to a flame or heat, nor break up in extreme cold weather as does rubber hose, but stands an immense pressure and any climate.

It is also fitted with the "Ne-Plus" full water couplings, which give full water way, are easily opened and do not leak. The value of this coupling will be seen when we remember that the ordinary coupling goes only two thirds of the capacity of the hose so that the hose used is equal, almost to a size larger hose than as ordinarily fitted. The Paragon Hose Reel has proved efficient in many instances and saved hundreds of thousands of dollars in many buildings where in use. A partial list of buildings, hotels, mills, factories, residences, warehouses, etc., where this most efficient apparatus is in use is appended: Firemen's Fund Insurance Co., Union Iron Works, Risdon Iron & Locomotive Works, H. S. Crocker & Co., American Biscuit Co., Schmidt Label & Lithographing Co., Rix & Firth, Phoenix Iron Works, Wells, Fargo Building, Market St. Cable R. R. Co., California Electric Light Co., S. P.



Rosenthal Building, Market St. SALFIELD & KOHLBERG. ARCHITECTS.